UNIVERSITY COLLEGE LONDON
Faculty of the Built Environment
Bartlett School of Planning

BARRIERS TO DOMESTIC MICRO-GENERATION

Sarah Cattermole MA Cantab

MSc Town Planning
ENVSGW01

Being a Report submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc Town Planning at University College London:

I declare that this Report is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Dr Joanna Williams, for the direction and support provided during the course of my research, and latterly Professor Matthew Carmona for his assistance in refining the final draft.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

"Climate change is perhaps the greatest challenge facing our world today" (Tony Blair, 2007). The growing and incontrovertible body of scientific evidence that the climate is changing as a result of man-made greenhouse gases can no longer be ignored, and the UK government has voiced its commitment to tackling climate change as a top priority. Amongst other things, reducing greenhouse gases will require switching to more sustainable forms of energy supply, particularly renewable energy. Small-scale renewable energy technologies, such as solar panels, also known as micro-generation technologies (MGTs), have a vital contribution to make in meeting the UK's emissions reductions targets, as well as raising awareness and encouraging behavioural change. However, to date, take-up of MGTs has been slow, and in recent years demand for them appears to have waned. This research seeks to identify and understand the barriers preventing a more widespread take-up of micro-generation in the domestic sector of the UK, viewed from the perspective of eight different groups that are involved in the process: from designing through to implementing a micro-generation scheme. Quantitative research is undertaken through questionnaires sent to the groups: householders, developers, planning consultants, architects/technicians, development control officers, policy officers, local councillors and micro-generation installers. Analysis of the responses provides conclusions that cost is the most significant barrier, and none of the MGTs can currently meet householders expectations of pay-back times. There is a lack of detailed public awareness of MGTs and the LCBP grant, and a lack of expertise within planning departments. Planning permission is not seen as a major barrier, but there is a perception that it would be difficult to obtain; key obstacles are likely to be the location of the dwelling, neighbour objections and unsupportive planning officers. There is also a lack of positive planning policies.

Word Count: 10,819

1. INTRODUCTION

"Climate change has profound implications for virtually every aspect of human well-being" (Kofi Annan quoted in DEFRA, 2007, para 1). There is a growing and incontrovertible body of scientific evidence that the climate is changing as a result of man-made greenhouse gas emissions. This can no longer be ignored, and the UK government has voiced its commitment to tackling climate change as a "top priority" (HM Government, 2007(b), p4). The UK is legally committed to reducing greenhouse gas emissions under the Kyoto Protocol, and has also set additional domestic targets through the UK Climate Change programme.

The energy supply sector contributes significantly to greenhouse gas emissions, and amongst other things, reducing emissions will require a switch to more sustainable forms of energy supply, particularly renewable energy. Whilst renewable energy is often envisaged only in terms of large-scale enterprises, small-scale renewable energy technologies, such as solar panels, known as micro-generation technologies (MGTs), could also make a vital contribution to meeting the UK's targets, as well as raising awareness and encouraging behavioural change.

To date, take-up of MGTs has been slow, and in recent years demand appears to have waned. Although the literature identifies a number of possible barriers to micro-generation, little detailed research has examined these in combination, or investigated how the different barriers affect different groups involved in designing and implementing micro-generation schemes. This has important implications for future policy and regulation, as the various dimensions of the barriers and their impacts on different groups need to be fully understood, in order to best incentivise take-up.

This research seeks to identify and understand the barriers preventing a more widespread take-up of micro-generation in the domestic sector of the UK, both retro-fitted and incorporated into new-build, viewed from the perspective of the groups involved in the process of designing and implementing a micro-generation scheme. This study uses quantitative primary research in the form of self-completion questionnaires to gain a fuller understanding of the barriers and their impacts on the different groups.

Key Research Objectives:

- To review the literature and provide a background to the topic, examining the reasons for the push towards wider take-up of renewable energy and explaining the role of domestic micro-generation;
- To develop a conceptual framework identifying the potential barriers to domestic micro-generation, and how these barriers might affect different groups;
- To investigate by means of primary quantitative research what each of the different groups consider to be the main barriers to micro-generation and to examine the different dimensions of the barriers identified;
- To analyse the data collected, providing conclusions as to what the main barriers to domestic micro-generation are, and providing suggestions for overcoming them;
- To identify areas for further research and investigation.

2. LITERATURE AND TOPIC REVIEW

2.1 Climate Change

For some years there has been a growing and incontrovertible body of scientific evidence that the earth is experiencing discernable changes in its climate as a result of man-made greenhouse gas emissions. The concentration of greenhouse gases in the atmosphere today is equivalent to around 430 parts per million (ppm) carbon dioxide (CO_2) equivalent compared with only 280ppm before the Industrial Revolution (Stern, 2006, piii). Emissions of greenhouse gases have increased by 70% over the period 1970-2004 and emissions of CO_2 over the same period have increased by 80% (IPCC, 2007, p3). The average global temperature has risen by 0.4°C since the 1970s (DEFRA, 2007, para 4), and predictions suggest that by the end of the twenty-first century temperatures in the UK may rise by as much as 3.5°C (ODPM, 2004(b), p18).

The impacts of climate change are likely to be manifold; as identified by former UN Secretary General Kofi Annan climate change has "profound implications for virtually every aspect of human well-being" (DEFRA, 2007, para 1). The Stern Review assessed the likely impacts of climate change on the economy, and concluded that immediate action was required to combat it; "The evidence gathered by the Review leads to a simple conclusion: the benefits of strong, early action considerably outweigh the costs. The evidence shows that ignoring climate change will eventually damage economic growth" (Stern, 2006, piii). As well as economic impacts, climate change is beginning to have significant environmental and humanitarian impacts which will continue to worsen; extreme weather events will become more frequent and more intense, flooding will threaten a greater number of people and reductions in crop yields will lead to widespread malnutrition (DEFRA, 2007, para 7).

Tackling climate change has now become a key priority for the UK government; the former Prime Minister Tony Blair described climate change as "perhaps the greatest challenge facing our world" and "without decisive and urgent action, it has the potential to be an economic disaster and an environmental catastrophe. This is why I have made it a top priority for this Government, both domestically and internationally" (HM Government, 2007(b), p4). The publication of a draft Climate Change Bill earlier this year, proposing binding legal commitments to reduce the UK's contribution to carbon dioxide emissions, indicates the importance that this issue has come to assume.

The government has committed itself to various targets in an attempt to reduce its greenhouse gas emissions. Under the Kyoto Protocol, the UK has a legally binding commitment to reduce greenhouse gas emissions by 12.5% below 1990 levels over the period 2008-12, and according to a parliamentary statement issued in March 2007 by the then Environment Secretary David Miliband, the latest projections show that UK greenhouse gas emissions should be around 24% below 1990 levels by 2010. However, the UK is making significantly poorer progress on reducing CO_2 emissions. The 2000 UK Climate Change Programme set a target of reducing CO_2 emissions by 20% below 1990 levels by 2010. National statistics published in February 2007 showed that CO_2 emissions had fallen by just 0.1% between 2004 and 2005, and David Miliband was forced to admit that the target "looks increasingly difficult to achieve" (Unattributed, 2007, p1). This target has therefore been replaced by a longer term goal of a 60% reduction by 2050, with 'real progress' by 2020. So, whilst the UK is making progress in reducing greenhouse gas emissions overall, significantly less progress is being made on reducing emissions of the main gas, CO_2.

2.2 Energy generation and consumption

As previously described, the primary cause of the changes in climate witnessed over the last century has been the emission of greenhouse gases, particularly CO_2. The largest growth in global greenhouse gas emissions between 1970-2004 has come from the energy supply sector, which has seen an increase in emissions of 145% (IPCC, 2007, p3). In the UK, energy consumption accounts for 95% of all CO_2 emissions and over the period 2005-06, CO_2 emissions from power stations increased by 4.75% (DTI, 2007, p17). Encouraging the development of sustainable energy supplies is therefore critical to reducing the UK's CO_2 and greenhouse gas emissions; a key strategy to achieve this is increasing the proportion of energy generated from renewable, low or zero-carbon sources. This is recognised by the UK government's 2007 Energy White Paper, which states "Renewables are key to our strategy to tackle climate change" (HM Government, 2007(a), p14).

The government has committed itself to the EU Renewables Directive target of achieving 10% of total electricity generation by renewable energy sources by 2010. The 2003 Energy White Paper suggested that in order to reach the government's target of reducing CO_2 emissions by 60% below 1990 levels by 2050, renewable energy sources will need to account for at least 30-

40% of our electricity generation. However, in 2006, renewables provided just 4.6% of electricity generated in the UK, an increase of just 0.4% from 2005 (DTI, 2007(b), p17). Jefferson (2006, p574) has described the expansion of renewable energy as 'generally disappointing', and although it is clear that renewable energy has a key role to play in combating climate change, at present the potential of this sector is hugely under-realised.

2.3 Renewable energy and micro-generation

Renewable energy is commonly pictured as stand-alone wind farms, hydro-electric schemes or large industrial biomass plants. However, small-scale renewable energy production on a household or community level also has a significant role to play, particularly that which is integrated into the built environment, as this accounts for almost half of the UK's CO_2 emissions (DTI, 2006, p8).

Technologies such as solar panels (photovoltaic and thermal), micro wind turbines, heat pumps and small-scale combined heat and power all fall within the definition of micro-generation, as set out in the Energy Act, 2004 (see Appendix 1 for full definition). MGTs are also variously described as "mass market renewables", "micro-renewables" and "distributed energy". The UK government demonstrated its view that micro-generation has a vital role to play in meeting its emissions reductions targets through the 2006 publication of its Micro-generation Strategy, 'Power from the People'. The Energy Saving Trust (EST) has suggested that by 2050 micro-generation could deliver all household energy needs, with excess being exported to the grid, as well as more than 50% of household heating demands. This would be equivalent to 30-40% of the UK's electricity needs and could reduce CO_2 emissions by 15% per annum (House of Commons, 2007, p17). Other research has also concluded that micro-generation has the potential to contribute significantly to reducing both overall greenhouse gas emissions and CO_2 emissions; Kalogirou (2004, p3075) has suggested that by using a solar energy system for domestic water heating rather than a conventional system, the reduction in greenhouse gas emissions is about 80%. The House of Commons Trade and Industry Committee (2007, p6) argues that installation of a roof-top turbine at a site with reasonable wind speeds could reduce CO_2 by 10-15% for an average household. Berry (2005, p8) concluded that if every house built between now and 2020 were to incorporate an average-sized solar hot water, solar photovoltaic or micro-wind system, it would amount to approximately 50% of the government's domestic energy efficiency target.

As well as making significant contributions to reducing emissions, micro-generation also has a wider contribution to make in encouraging people to change their behaviour. A report by the Sustainable Consumption Roundtable suggests that "the qualitative impacts of micro-generation technology can be substantial, presenting a living, breathing and emotionally engaging face to energy consumption" (cited in DTI, 2006, p8). Not only are MGTs often "visible components of the climate change solution" (Collins, 2004, p6) which help to raise public awareness, those who install them become "co-producers of climate change solutions rather than passive consumers of energy" *(ibid)*. Being involved in the energy generation process is likely to make individuals more aware of their energy use, and the House of Commons Trade and Industry Committee (2007, p11) presents evidence that households that install local energy schemes alter their behaviour in other ways, adopting additional energy saving measures.

So, according to the Leader of the Conservative Party, David Cameron "The future of energy is not top-down, it's bottom up". However, despite the clear contributions which micro-generation has the potential to make, take-up has been slow. In 2004 there were only approximately 82,000 micro-generation installations in the UK (EST, 2005) and a study undertaken by the EST shows that for most MGTs, installation rates have flattened, suggesting that demand has waned.

2.4 Possible barriers to micro-generation

Various researchers have tried to ascertain why micro-generation has not been more widely taken up in the UK, and it is possible to identify an array of possible barriers from the literature. According to the EST (2005), "the most commonly perceived barriers to the introduction of micro-generation are: legislation, high cost and level of consumer awareness". The 2007 Energy White Paper identifies "some technical constraints on making distributed energy compatible with the grid, as well as planning issues and other barriers such as up-front cost, and a lack of information about the possibilities available". Keirstead (2007, p2268) found that the diffusion of MGTs is "inhibited by their high cost and incongruence with existing energy systems". Hain et al (2005, p1199) argued that "existing renewable policy is insufficient in its support of both small-scale and community-based profit oriented renewable energy schemes". The suite of potential barriers can be broadly split into four categories: cost, awareness and acceptance, regulatory and technical and are shown in figure 2.4.1 below.

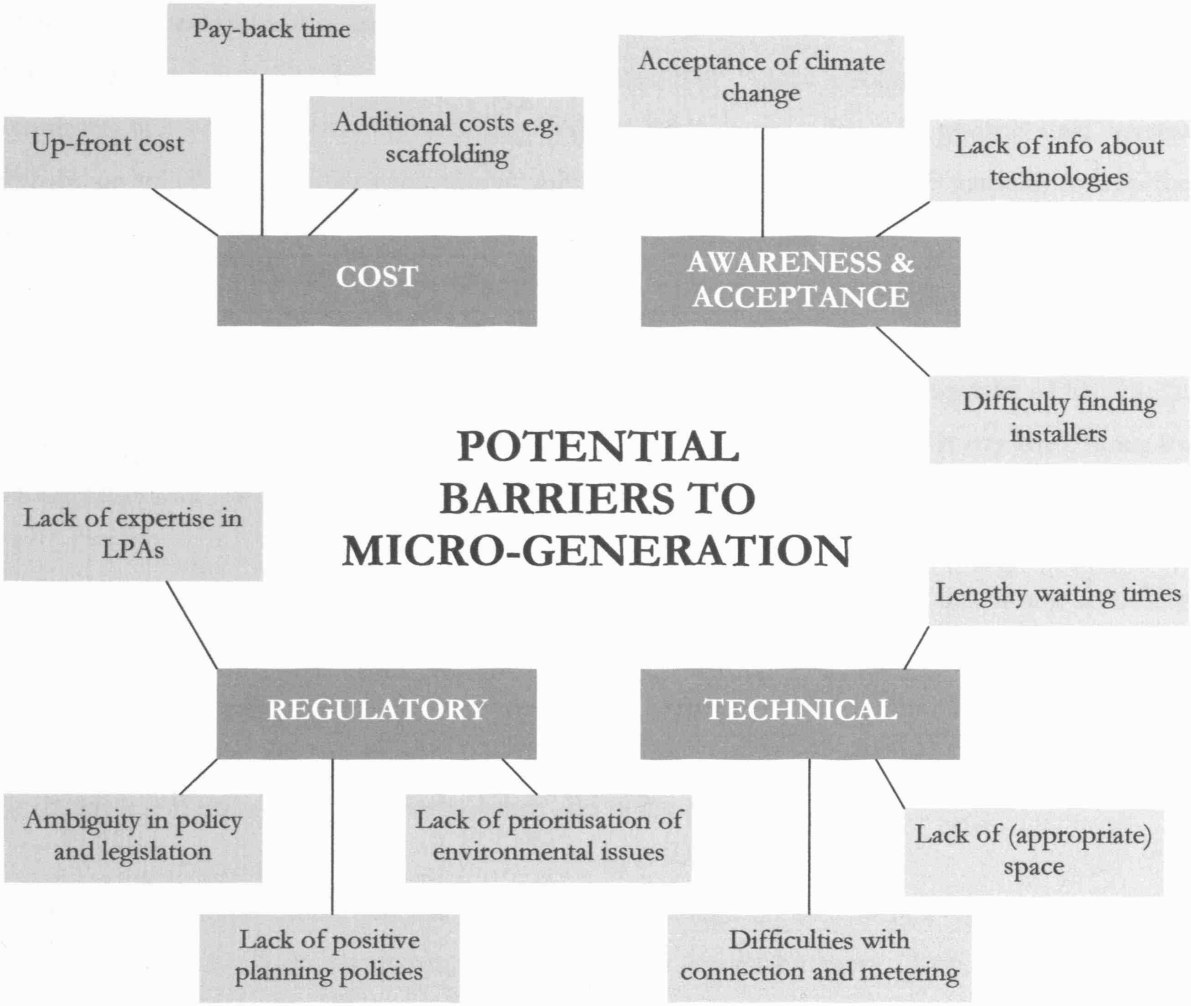

Figure 2.4.1 – Potential barriers to micro-generation

2.4.1 Cost

Cost is often identified as a barrier to micro-generation: Jager-Waldau (2007, p1416) sees the second main barrier (after technical issues relating to the conventional energy distribution network) as being of a financial nature. The House of Commons Trade and Industry Committee (2007, p17) argues that "crucially, it must also be borne in mind that most local energy technologies are either too expensive for most consumers, or not even market ready". At present the market for MGTs is relatively undeveloped, and consequently the technologies are expensive. For instance domestic solar water heating typically costs £3000-£4500 to install (EST, 2007(c), p2), solar photovoltaic systems usually cost at least £4000-£9000 (EST, 2007(d), p2) and micro wind turbines can cost anything from £1500 to £25000 (EST, 2007(e), p3).

A further dimension of the cost barrier is the length of pay-back time. The House of Commons Trade and Industry Committee (2007, p33) states that "most energy technologies are too expensive to be cost-effective". According to them, payback times for solar photovoltaic systems can be up to 120 years, solar thermal may take 80 years, and it may take 29 years to recoup the costs of a wind turbine. The EST gives slightly different figures for solar photovoltaic (36-72 years) and micro-wind (55-71), and also gives payback times for ground source heat pumps as approximately 13 years, and biomass boilers 23 years. According to Sauter and Wilson (2007, p2776) the length of the pay-back times is an important reason for the low up-take of MGTs: "it is generally assumed that private households only invest in energy efficiency if pay-back times are in the range of a few years".

Additional costs may also be incurred both at the time of installation and in the future; according to Syngellakis *et al* (2006, p44) the cost of cabling can become significant and yearly maintenance of wind turbines involves inspection and regreasing; paying for an installer to travel and lower the turbine to working level is likely to be costly. The installation process may involve hiring scaffolding and other additional costs, which add to the overall cost.

Concerns have been raised that the cost of incorporating MGTs into new-build dwellings will render housing developments unviable. However, as argued by Berry (2005, p8) the evidence from Merton and Croydon suggests that this "is not the barrier many have predicted". Berry further asserts that carbon reductions of 20% could be achieved through micro-generation, and that this would typically add around 1% to the sale price of the average new-build housing in the south east. According to London Renewables (2004, p184) the key in ensuring that viability is not affected, is to make developers aware of the requirement before they enter into a bidding process for a site.

Grants are currently available to householders wishing to install MGTs from the Department for Business Enterprise and Regulatory Reform (BERR) through the 'Low Carbon Buildings Programme' (LCBP). According to the Government the purpose of this is to "demonstrate the potential of MGTs and to stimulate the market by demonstrating their potential" (HM Government, 2007(a), p94). The LCBP has been plagued with difficulties from its introduction. Initially a monthly cap was placed on the grant and householders could apply for funding up to £15000. However, the funds often ran out within hours of becoming available on the first day of the month (Early, 2007, p1) and consequently in March 2007 the DTI suspended the grant

programme to allow a review. On 29th May 2007, the householder stream of the grant was relaunched, with a total budget of £11.9m. This time, there is no monthly cap on funds, but the maximum limit on grants per household has been reduced to £2500. This attracted widespread criticism in the renewable energy industry; the Renewable Energy Association chief executive Philip Wolfe stated: "This decision will place renewable energy beyond the reach of all but the wealthiest households. In particular it will hit solar photovoltaic and wind, two of the most popular technologies in the programme".

The up-front cost and pay-back times of installing MGTs can be considerable, and several authors have argued that those households which have to date installed MGTs are "not necessarily motivated by a rational cost-benefit analysis" (House of Commons, 2007, p28). Syngellakis *et al* (2006, p44) cite a research project which showed that most wind turbine installations were installed for educational or environmental reasons; only 4% were financially motivated.

2.4.2 Awareness and Acceptance

Public awareness and social acceptance of MGTs is vital if they are to become widespread; householders and the general public will need to embrace these technologies and change their everyday behaviour. Sauter and Wilson (2007, p2770) argue that "social acceptance is a pre-requisite for the adoption and introduction of new technologies" and "MGTs need more 'active' social acceptance... householders need to accept these technological innovations within their household" (p2777). Similarly, Elliott (2000, p261) states that "while the development of the technology itself is relatively straightforward, the social and institutional implementation problems are often much harder to resolve".

Faiers and Neame (2006, p1798) identify a lack of interest amongst householders in micro-generation: "despite their positive characteristics, solar systems remain unattractive to individual householders as a home improvement and incompatible with personal priorities". The Sustainable Consumption Roundtable (2006, p5) identify what they describe as the 'value-action' gap – a considerable gap between peoples' attitudes, which are often pro-environmental, and their everyday behaviour. A lack of social acceptance of the concept of climate change and the need for action could create a significant barrier to the take-up of micro-generation as a significant source of renewable energy.

Public awareness may be affected by a lack of information available regarding micro-generation products and installers. According to the Government (2007(a), p97): "information is patchy or located in a variety of places", and a UK survey undertaken by Oxera confirmed that a lack of knowledge is a major barrier (cited in Sauter and Wilson, 2007, p2776). Where there is information available about products, it is often ambiguous. For instance, the pay-back times quoted in section 2.4.1 vary considerably for each technology depending on which source you read. According to Renewables East (2005) a lack of qualified installers may also prove a problem.

A related issue which has been identified by Oxera (*ibid*) is the lack of an accreditation scheme, which could have a significant influence on householders' investment decisions. Until recently, there was no single accreditation scheme for micro-generation installers or products; however, the DTI introduced the "UK Microgeneration Certification Scheme" to coincide with the re-launch of the LCBP grant in May 2007. This scheme applies to both products and installers, and the LCBP grant will only be available if the product and installer are certified.

2.4.3 Regulatory

The possible regulatory barriers identified relate to the planning system; the Building Regulations are not relevant in this context since they do not inhibit micro-generation. The planning system is widely acknowledged as having a key role to play in combating climate change and encouraging the use of renewable energy, including micro-generation. McEvoy (2006) argues that "the UK planning system has a particularly important role to play in tackling climate change. It is influential in shaping future communities, their use of energy and associated emissions as well as their vulnerability to future impacts". According to the Town and Country Planning Association (TCPA) "the planning system is a crucial delivery mechanism for sustainable energy" (2006, para 4.1). Planning can also "recognise new developments' potential as a net producer of energy and can help to develop decentralised energy infrastructure" (Kliman, 2006, p17). The role of planning is relevant both to retro-fitting of MGTs, and their installation in new-build housing development. An interesting statistic was given by MP Ruth Kelly, "By 2050, perhaps one third of the housing stock will have been built since 2006." Ms Kelly went on to argue, "These new homes offer the opportunity to do things differently".

Despite this, the planning system is also seen as "one of the most significant barriers to the deployment of renewables" (HM Government, 2007(a), p96), for a number of reasons. In the most straightforward sense, the need to gain planning permission for MGTs is seen as a potential barrier. The House of Commons Trade and Industry Committee (2007, p20) conclude that the time and cost of gaining planning permission is a significant deterrent.

A lack of expertise within Local Planning Authorities (LPAs) has also been identified as a potential problem; Syngellakis et al (2006, p42) argue that "constraints experienced by small wind turbine owners when applying for planning permission are mainly centred on the local planning departments and individuals' lack of experience with small wind installations". According to Morris (2006) "most council officers, developers, architects and landowners have little if any experience of environmentally friendly development".

Even if planning officers receive training and gain experience of this type of development, the final decision in determining a planning application will often be made by the Planning Committee. Lack of knowledge and experience amongst councillors, as well as a lack of prioritisation of environmental issues within councils, are identified as further potential barriers. The Ecotricity Chief Executive, Dale Vince, has opined that, "Committees are terrible at taking the advice of full-time professional officers. They are not capable of making decisions on something as important as wind power" (cited in Wilson, 2007). Similarly, British Wind Energy Association (BWEA) chief executive Maria McCaffery has said, "Decisions are often made by people who are not terribly well qualified to make them, where prejudices can come to the fore and are based on outdated information. I hear of outrageous situations where objections are made by councillors who have not even read the planning policy." (cited in Royal, 2006).

A further barrier lies in the sometimes ambiguous nature of planning policy and legislation. At present there is no specific legislation to determine whether MGTs require planning permission, or benefit from householders' permitted development rights. Instead, planning authorities must decide whether or not certain technologies fall within the rights set out in the Town and Country Planning (General Permitted Development) Order (GPDO) for general extensions and alterations to dwellinghouses, and conclusions can vary considerably. The Government is currently consulting on proposals to introduce a set of Permitted Development Rights for householder micro-generation. In the text accompanying this consultation document, the Department for Communities and Local Government (DCLG) states "It will also set out clearly

what is and what is not permitted" acknowledging that this is "an existing source of frustration amongst local planning authorities as well as members of the public" (2007, p5).

A lack of positive planning policies has also been cited as a possible barrier. According to Gillespie (2006): "Planners are as aware of climate change as everybody else, but there have been difficulties translating this concern into practice. In the absence of specific guidance, planners have been faced with a bewildering array of possible mechanisms to encourage more energy-efficient of climate-adapted buildings". Planning Policy Statement (PPS) 22 "Planning for Renewable Energy" allows local authorities to include policies within their development plans requiring a certain percentage of the predicted future energy needs of a development to be met through the provision of on-site renewable energy. This type of policy was championed by the London Borough of Merton, and has become known in the profession as a 'Merton-style' policy. The PPS 22 clause was strengthened by a parliamentary statement made by the Planning and Housing Minister Yvette Cooper, which stated the Government's "expectation" that all authorities should include this type of policy within their development plans. However, in 2006, only 50 LPAs across the UK had adopted Merton-style policies (Unattributed, 2006), and consequently it is only these LPAs that are able to require developers to incorporate renewable energy into new developments.

2.4.4 Technical

A variety of technical barriers may face householders wishing to install a MGT. These may include a lack of appropriate space: for example solar water heating and solar photovoltaic panels work at their best when located on a south-facing roof-slope. A dwelling may not have a suitable south-facing roof-slope, or there may be insufficient room for panels. Lengthy waiting times for installation may also prove a barrier to micro-generation; consumers may decide not to go ahead if there is no prospect of the work being undertaken in the immediate future.

Many MGTs require connection to the national grid, as the intermittent nature of their generation means that there will be times when the householder needs to import electricity and times when there is a surplus to export. However, "The current economic and social system is based on centralised sources of energy and their distribution system" (Jager-Waldau, 2007, p1416). This means that it can be difficult for micro-generators to connect to the network.

According to the Government (2007(a), p85): "there are some technical constraints on making distributed energy compatible with the grid".

2.5 Barriers by Group

Little detailed research has been carried out into how and to what extent the combination of potential barriers affects different groups, such as householders, developers, architects and planners, and the consequent implications for future policy and regulation. This research seeks to complement the existing literature, by seeking the views of the eight groups detailed in figure 2.5.1 below. These groups have been identified through a conceptualisation of the process from initiation of the idea of installing a micro-generation technology, through to completion of the project by installation.

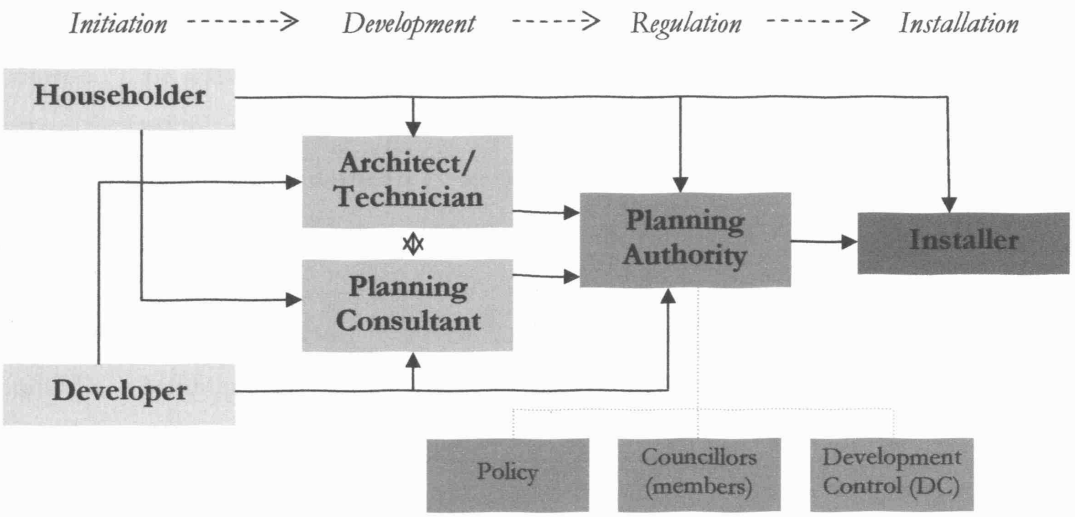

Figure 2.5.1 – Conceptualisation of key groups

3. METHODOLOGY

A quantitative research method was employed, with a cross-sectional research design, achieved through the use of self-completion questionnaires applied to the East of England region.

3.1 The East of England

It was not feasible to attempt to sample from the whole of England because of time and resource constraints. Instead, the research focused on the East of England region.

The use of case studies often introduces research limitations particularly with regard to the "generalizability" of the research (Bryman, 2004, p51). It is widely accepted that a single case cannot possibly be representative, or yield findings, that can be applied to other cases. However, the definition of a 'case' given by Bryman (2004, p49) is of "a location, such as a community or organisation. The emphasis tends to be upon an intensive examination of the setting." It is considered that using the East of England rather than the UK for the purposes of this study does not invalidate this research. Rather a cross-sectional research design has been drawn up, to be implemented in a geographically restricted area.

The demographic profile of the East of England, in comparison to England, is shown in Appendix 2. Although no rigorous statistical analysis of the demographic data has been undertaken to establish the level of representativeness, a number of key trends are clear and are shown in table 3.1.1.

East of England vs England trends
▪ The East of England has a higher percentage of white persons within the population than the national average;
▪ The East of England has a male to female split of 49% to 51%, the same as the national average;
▪ The East of England has a lower unemployment rate than the national average;
▪ The East of England has a lower proportion of persons with no qualifications than the national average;
▪ The East of England has a lower proportion of households with no cars or vans than the national average;
▪ The East of England has a lower proportion of persons whose health is not good than the national average.

Table 3.1.1 – East of England vs England trends

From a basic analysis of this data, it would seem that the population of the East of England region is generally more affluent, with higher levels of qualification, higher rates of employment and better health than the national average. This may have implications for the outcome of the research (for instance in a more affluent area, cost considerations may be less critical for householders) and this should be borne in mind when making generalisations about the research findings.

Despite this limitation, it is considered that the research is still highly relevant and its importance is not diminished.

3.2 The self-completion questionnaires

As previously described, questionnaires were used to obtain primary quantitative data. Questionnaires were sent to a sample from each of the eight groups identified in figure 2.5.1: householders, developers, planning consultants, architects/architectural technicians, Development Control (DC) officers, Policy officers, local councillors, and micro-generation installers.

A self-completion questionnaire was selected as the preferred research method for a number of reasons: it would be less resource-intensive to administer than structured interviewing, more convenient for respondents to complete and therefore more likely to receive a response, and would not suffer from 'interviewer effects' (Bryman, 2004). It is acknowledged that there are disadvantages to this approach, particularly the inability to probe or ask additional questions, the limited nature of questions which can be asked, and the relatively low response rates which are likely. However, despite these limitations, this approach was considered the most appropriate given the nature of the research questions and the resources available.

A number of important factors were kept in consideration when the questionnaires were devised. The layout and presentation were carefully considered to ensure that the questionnaire would be easy to follow, minimising the risk that the respondent would fail to answer the relevant questions (Bryman, 2004, p133). Each questionnaire began with simple questions about the respondent, in the hope that this would prevent respondents from being put off completing the questionnaire at first glance. This follows Bryman's advice to begin with questions which are more likely to be of interest to the respondent (2004, p137). The language used was simple,

direct and appropriate to the sample population (Swetnam, p60). Clear instructions were provided as to how to respond, and wherever possible, closed questions were used, as these tend to be easier to answer and are easier to process for analysis, as well as more easily comparable. In recognition of the fact that it is difficult to make 'forced-choice' questions exhaustive, a category of 'other' was included where relevant, with space to provide this answer (Bryman, 2004, p150). Other rules set out in Bryman (2004, p152-4) were also followed, including avoiding ambiguous terms, long, double-barrelled or leading questions, and making sure that options for closed questions were balanced.

To ensure that the questionnaires were fully relevant to each group, a separate one was tailor-made for each, with questions directly related to the research objectives. To ensure that the relevant questions were asked, a matrix was drawn up to identify which of the possible barriers identified from the literature were likely to affect each group. This conceptualisation is shown in table 3.3.1 overleaf. The matrix was further developed to ensure that specific questions about a particular barrier were the same in each relevant questionnaire, so that that the results would be comparable between groups. This is shown in Appendix 3.

3.3 Piloting

Once the questionnaires had been drawn up, a piloting exercise was undertaken. This is "always desirable, if at all possible...Pilot studies may be particularly crucial in relation to research based on the self-completion questionnaire." (Bryman, 2004, p159). A piloting exercise can help to ensure that a full array of options is provided for fixed-choice questions, to identify whether any questions are unclear or ambiguous, and to identify how well the questions flow and whether it is necessary to move some of them around (Bryman, 2004, p160).

Questionnaires for the following groups were piloted: planning consultants, architects/technicians, DC officers, Policy officers, local councillors and installers. Samples for the pilot were chosen from the same populations identified in table 3.4.1, but for the East Midlands region, to avoid targeting the East of England twice. This approach was taken as it is recommended that "it is best to find a small set of respondents who are comparable to members of the population from which the sample for the full study will be taken". A sample size of 15 was chosen for the piloting exercise. The householder questionnaire was not formally piloted, because of constraints associated with both selecting a pilot sample and administering the

Potential barrier	Householder	Developer	Planning Consultants	Architect/ Technician	DC Officers	Policy Officers	Local councillors	Installer
COST								
Cost of technology	X	X	X	X				X
Length of payback time	X	X	X	X				X
Additional costs	X	X	X	X				X
AWARENESS & ACCEPTANCE								
Public acceptance of CC	X	X	X	X	X	X	X	X
Difficulty finding installers	X	X	X	X				X
Lack of information about technologies	X	X	X	X	X		X	
TECHNICAL								
Lack of appropriate space	X	X	X	X				X
Difficulties with connection/metering	X	X						X
Lengthy waiting times	X	X	X	X				X
REGULATORY								
Lack of RE expertise in LPAs					X	X	X	
Lack of prioritisation of environmental issues					X	X	X	
Lack of positive planning policies	X	X	X	X	X	X	X	X
Ambiguity in planning policies and legislation	X	X	X	X	X	X	X	X

Table 3.3.1 – Barriers by group

questionnaire; friends, family and colleagues were asked to complete the draft questionnaire as an alternative. The developer group was not piloted because the population sub-set for the final sample was small and UK-wide, so it was not possible to find a comparable population for the piloting exercise.

Amendments were made to the questionnaires following the pilot, mainly to add options to fixed-choice questions, and to re-phrase potentially confusing questions. Copies of the final questionnaires are attached at Appendix 4.

3.4 The final samples

Table 3.4.1 below shows the type and size of sample taken for each of the eight groups. For some of these groups it was possible to gain access to details of the entire population, for example it was possible to obtain contact details for all of the 48 local authorities within the East of England. However, for the majority of the groups it was necessary to obtain contact details from professional bodies, such as the RTPI for planning consultants, and RIBA or CIAT for architects and architectural technicians. This means that the entire population will not be sampled because, for example, some architects may choose not be a member of RIBA. In these cases the sample is necessarily taken from a sub-set of the population, which introduces a limitation to the validity of the method, as the consequent sample will not be truly representative of the population. However, this was the only approach possible, and it is considered that this limitation will not fundamentally threaten the validity of the research.

Group	Population or subset	Sample type	Sample size
Householders	Property database for one district	Random	100
Developers	'New homes'	Population	79
Planning Consultants	RTPI consultants	Population	68
Architects/Technicians	RIBA/CIAT	Random	100
DC officers	Population	Population	48
Policy officers	Population	Population	48
Local councillors	Planning committee chairman	Population	48
Installers	DTI list	Stratified	100

Table 3.4.1 – Summary of samples

For the householder group, a sub-set of the entire population was used because of resource constraints. The population of the East of England is approx 5.3 million (ONS, 2007) and it would have been extremely time consuming and costly to obtain a list of the addresses for this number of people. Instead, the decision was taken to sample from one district within the region,

East Cambridgeshire, as the property database for this district was readily accessible. It is acknowledged that this approach introduces further limitations to the research, as set out in section 3.1, but it is considered that this will not greatly reduce the validity.

In selecting a sample, the absolute size is more important than its size relative to the population (Bryman, 2004, p97). The larger the absolute sample, the more the likely it is to produce valid results. An ideal sample size of 100 was based on a balance between the desire for a large sample and the resource constraints. However, for some groups, the total population (or sub-set) was lower than 100, in which cases the entire population (or sub-set) was used. Details of the samples taken are given in table 3.4.1.

For householders, architects/technicians and installers a sample was selected using random numbers generated by a computer program. For householders and architects/technicians a simple random sample was undertaken, for installers a stratified random sample was used. The population sub-set from which the sample of installers was taken was the DTI's list of micro-generation installers operating within the East of England. This list was broken down by installation type, and it was considered necessary to use a stratified sample to ensure that it would exhibit a proportional representation of the different technologies, since each technology might experience different barriers. The stratification of this sample is shown in table 3.3 below.
Where possible, the questionnaires were sent to the sample respondents by e-mail, otherwise by post. The preference for e-mail was due to the cost of postage and the need to provide stamped

Installation type	Percentage of population sub-set
Biomass room heating	1%
Heat pumps	12%
Micro-hydro	1%
Micro-wind	10%
Solar hot water	38%
Solar photovoltaic	7%
Micro CHP	5%
More than one installation type	26%

Table 3.4.2 – Stratification of installers sample

addressed envelopes (SAEs) for returned questionnaires. E-mail was much less expensive, and this means of communication enabled reminders to be sent easily and quickly when responses were not received. For householders, and in other cases where an e-mail address was not available, the questionnaires were sent by post, with a SAE for return. For both methods, a covering letter/email was sent, outlining the overall purpose of the research, explaining how the

sample had been selected, detailing confidentiality and offering to provide a copy of the research findings.

4. ANALYSIS

In order to facilitate analysis, the data was input into SPSS. Table 4.1.1 below shows the response rates which were achieved; as is often the case with self-completion questionnaires, these are relatively low, with a 0% response rate achieved from developers (discussed in section 4.7).

Group	Sample size	No. of responses	Response rate
Householders	100	31	31%
Developers	79	0	0%
Planning Consultants	68	11	16%
Architects/Technicians	100	18	18%
DC officers	48	12	25%
Policy officers	48	19	40%
Local councillors	48	8	17%
Installers	100	23	23%
TOTAL	591	122	21%

Table 4.1.1 – Summary of responses

The analysis of the research findings will begin by assessing whether there is a lack of take-up of micro-generation amongst the sample, and will then analyse the response to questions about barriers in general, before looking at each of the categories of possible barrier in turn. A summary of the primary data gathered is provided at Appendix 6.

4.1 Demand for micro-generation

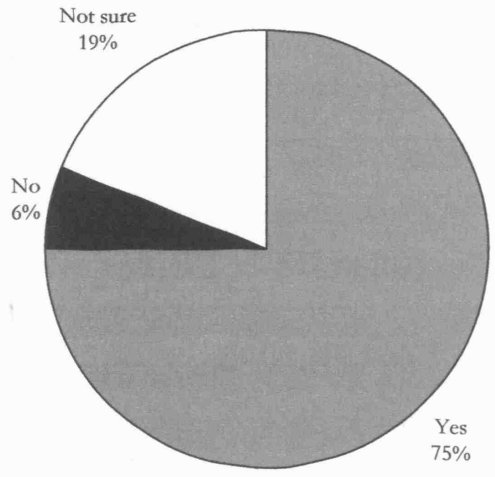

Figure 4.1.1- Do you believe that human induced climate change is happening?

Each of the groups was asked a key question, "Do you believe that human-induced climate change is happening?" Figure 4.1.1 shows that the overwhelming majority of respondents across all groups believe that climate change is occurring. A lack of belief that climate change is occurring does not appear to be a reason for the apparent low take-up of micro-generation. Figure 4.1.2 shows the breakdown of responses between the groups. One perhaps surprising result was that 13% of installers answered 'no'.

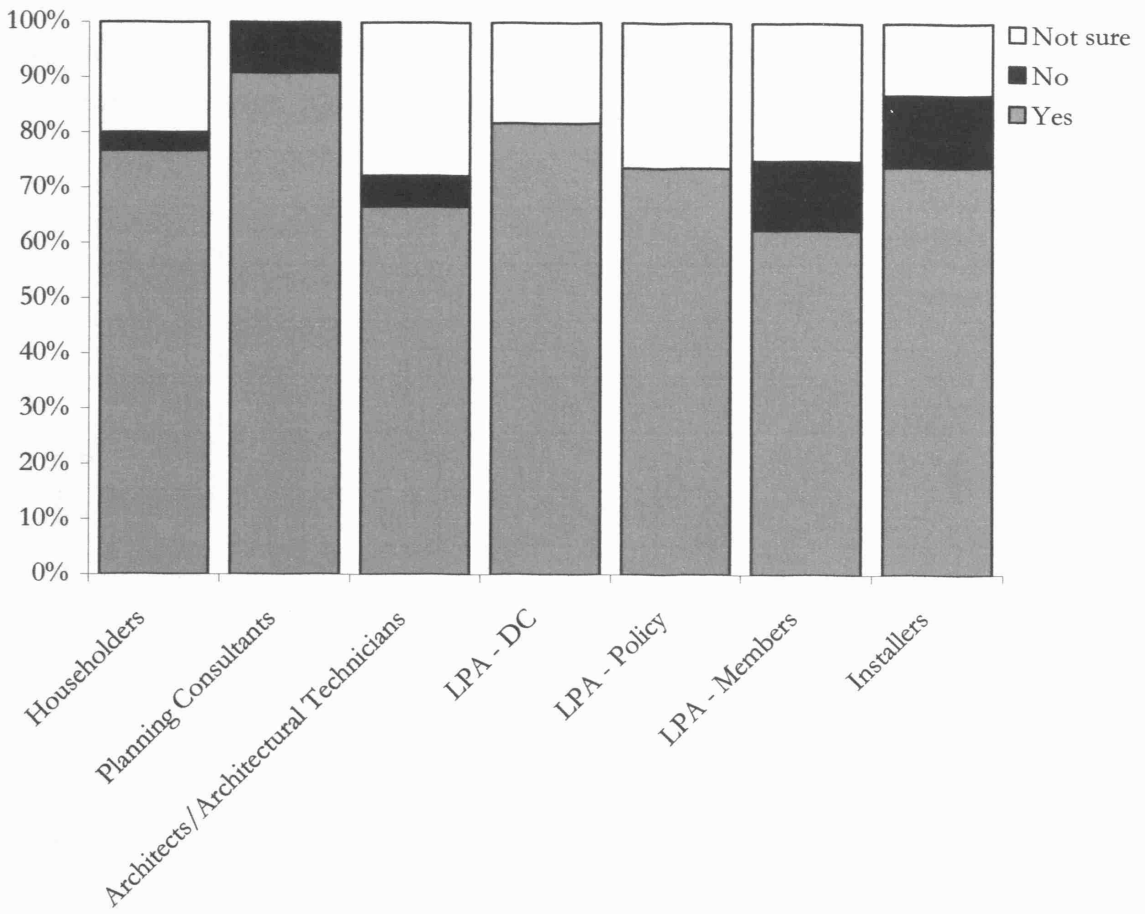

Figure 4.1.2 – Do you believe that human-induced climate change is happening? Responses by group

The group with the lowest percentage of respondents answering 'yes' was planning committee chairmen, of which a further 25% weren't sure.

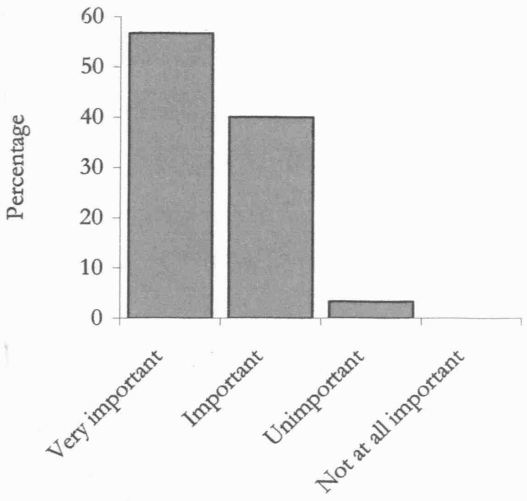

Figure 4.1.3 – How important is it to use more energy from renewable sources? (Householders)

Householders were also asked how important they thought it was to use more energy from renewable sources. Figure 4.1.3 shows that 55% thought it was very important, 39% thought it was important, and only 3.2% (1 respondent) thought that it was unimportant.

Of the householders, just under 50% had considered installing a micro-generation technology. The question of whether there is initial demand for micro-generation was further investigated in the

architects/architectural technicians' questionnaire. They were asked what proportion of their clients initially expresses an interest in incorporating a micro-generation technology, broken down by the type of work. The results are shown in figure 4.1.4 below.

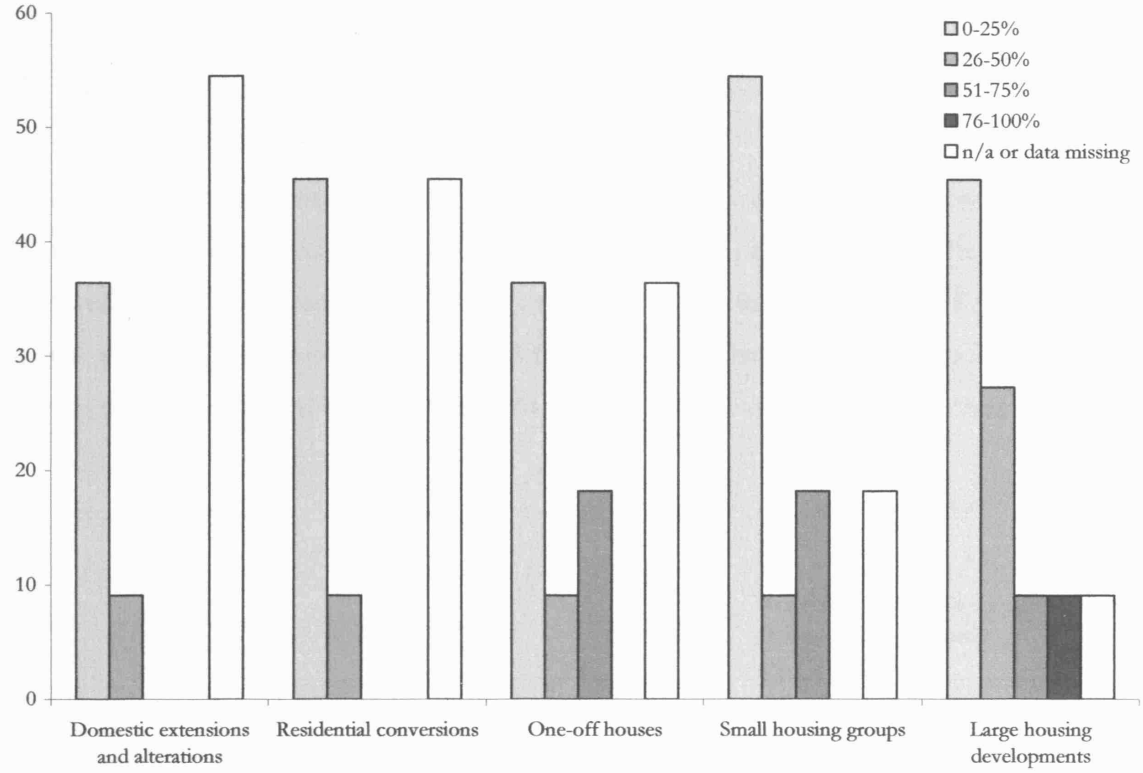

Figure 4.1.4 – Proportion of clients which initially express an interest in incorporating micro-generation (Architects/ architectural technicians)

For all types of work, the greatest percentage of respondents reported that only 0-25% of their clients expressed an interest in incorporating micro-generation. However, moving along the spectrum towards one-off houses, small housing groups and large housing developments, a higher percentage of respondents reported a higher level of demand.

DC officers were asked how many enquiries they received per week relating to domestic micro-generation installations. 100% of respondents said that they received 0-10.

This data in combination would seem to suggest that the majority of householders who had 'considered' installing micro-generation, had probably done little more than consider it. This assertion is further supported by the fact that whilst almost 50% of the householders said they had considered installing micro-generation, only 10% of respondents had actually gone ahead with an installation, or had an installation imminent.

It would appear from this data that there is interest amongst householders in renewable energy and micro-generation, but there is a noticeable gap between those who had thought about an installation and those who had actually gone through with it. This suggests that there are barriers preventing many people from installing MGTs.

4.2 General nature of barriers

The questionnaires contained general questions about the whole array of possible barriers to micro-generation as well as more in-depth questions about specific barriers. Respondents were asked what they considered to be the main reasons for not installing MGT. For householders this was answered on a personal basis, and for planning consultants, architects/technicians and installers this was based on their experience with clients. Figure 4.2.1 shows the responses.

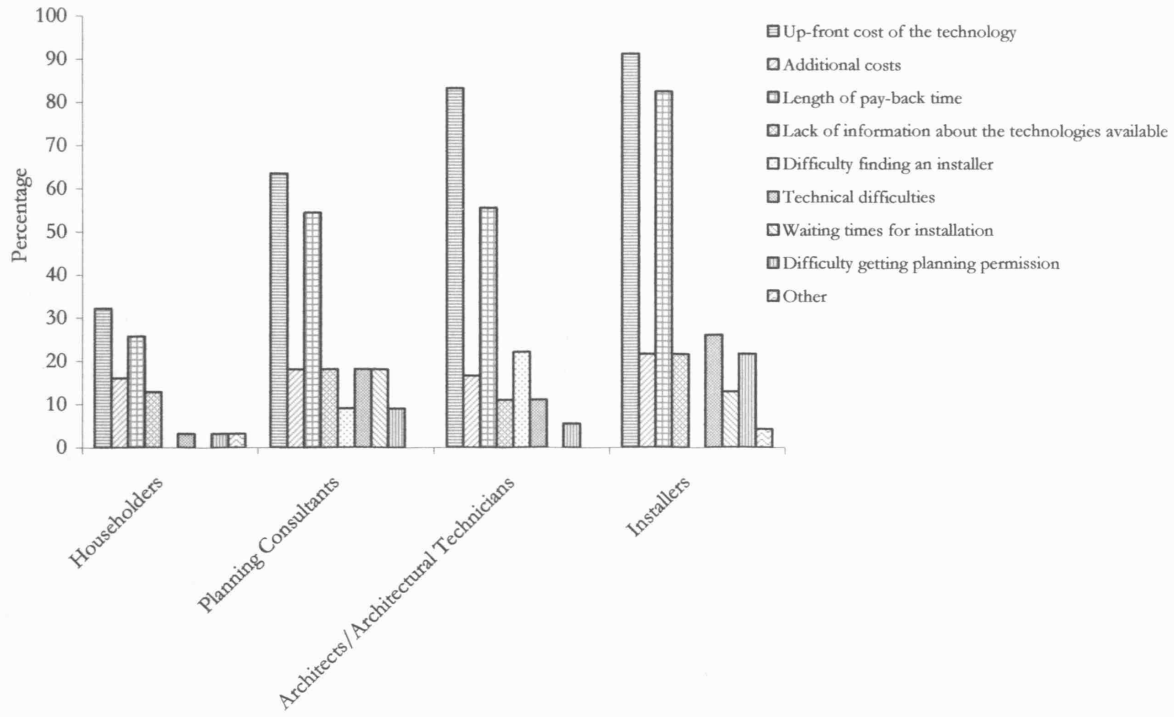

Figure 4.2.1 – Reasons for not going ahead with a micro-generation installation

For all four groups, the largest number of responses indicated the up-front cost of the technology, followed closely by the pay-back time. Additional costs and lack of information about the available technologies were also important reasons across all of the groups. Other reasons were given by two respondents; one householder said that a key reason for not going ahead with a micro-generation installation was that fact that the technologies appear to be sold by

"the modern equivalents of double-glazing salesman", and one installer gave the changing nature of obtaining DTI grants as a reason.

Respondents were then asked what the considered to be the BIGGEST reason for not going ahead with a micro-generation installation. The results are shown in figure 4.2.2 below.

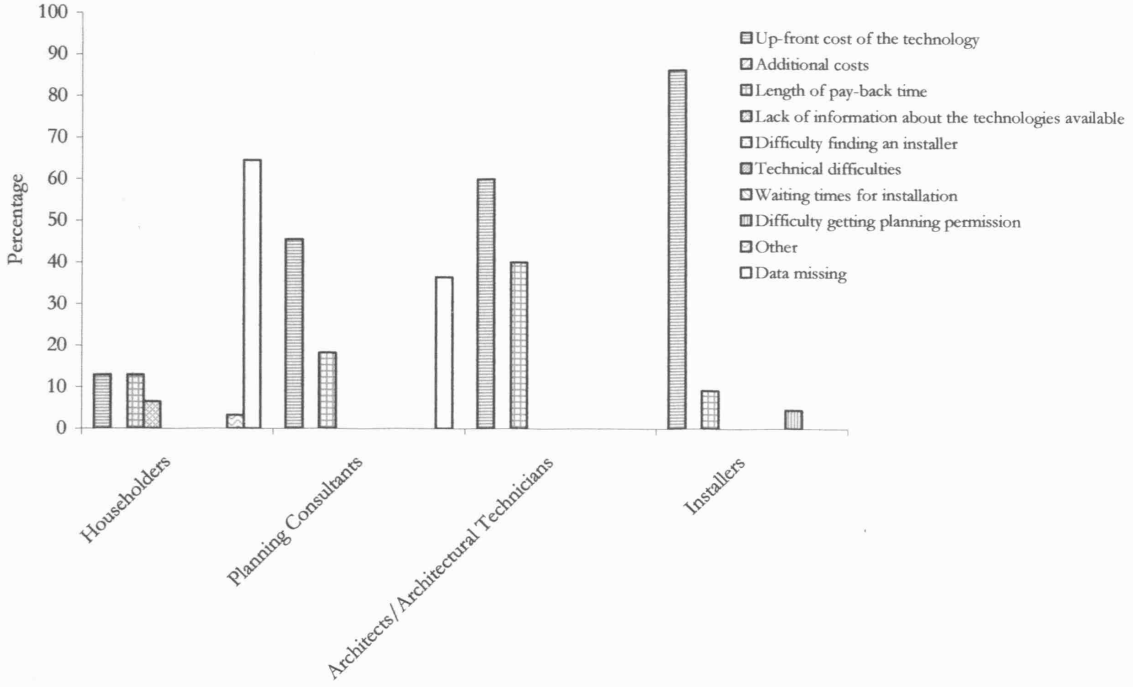

Figure 4.2.2 – Biggest reason for not going ahead with a micro-generation installation

For both the householders and planning consultants a considerable number of respondents did not answer this question, or answered it incorrectly (by giving more than one reason). This is shown by the missing data bar. However, the results mirror those shown in figure 4.2.1 and the same two reasons stand out – up-front costs of the technology and length of pay-back time. For the installers, difficulty getting planning permission was the biggest reason for one respondent, while a lack of information about the technologies available was the biggest reason for two householders (6.5%).

4.3 Cost

A number of questions were asked relating to the cost of micro-generation. Householders, planning consultants, architects/architectural technicians and installers were asked whether or not they agree that the cost of MGTs is too high in relation to the savings that are likely to be made.

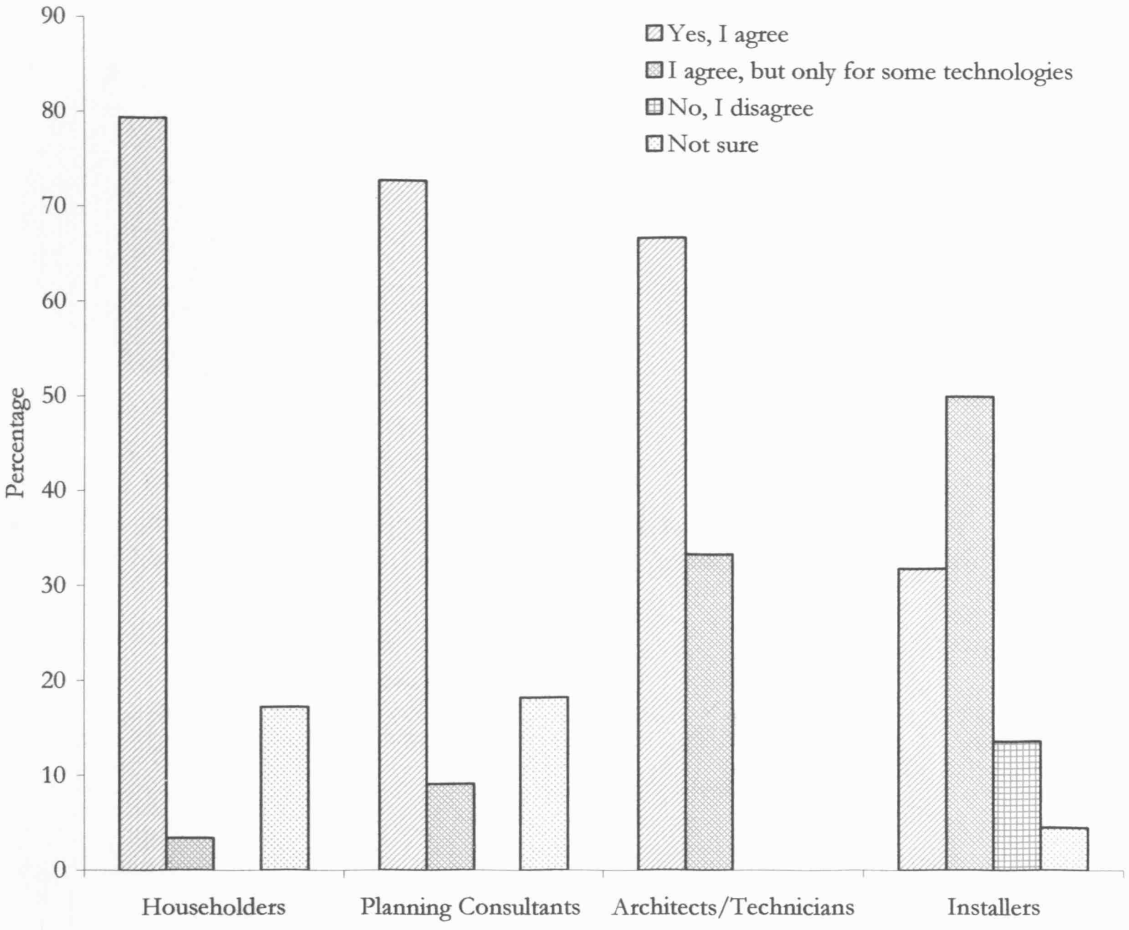

Figure 4.3.1 – Are the costs of installing MGTs too high in relation to the money savings that are likely to be made?

Figure 4.3.1 shows that views of installers differed significantly from those of the other three groups. Whilst the vast majority of householders, planning consultants and architects/architectural technicians agreed that the cost was too high, the majority of installers (50%) felt this was only the case for some technologies. 14% of installers disagreed that the cost was too high for any technology.

In order to ascertain whether or not householders, planning consultants and architects/architectural technicians are fully informed about the costs of micro-generation, they were asked whether or not they were aware of the LCBP grant programme. The responses are summarised in figures 4.3.2 to 4.3.5 .

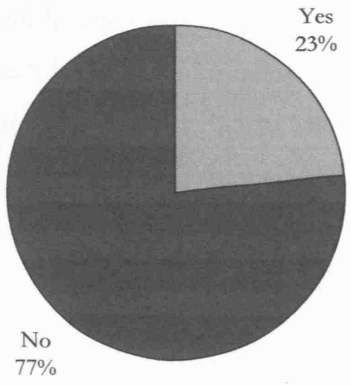

Figure 4.3.2 – Are you aware of the LCBP grant? Householders

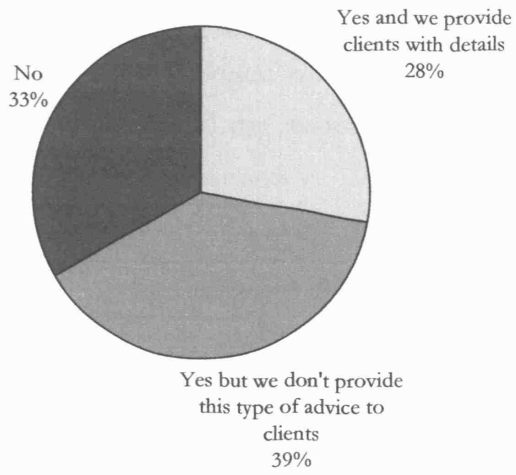

Figure 4.3.3 – Are you aware of the LCBP grant? Architects/ technicians

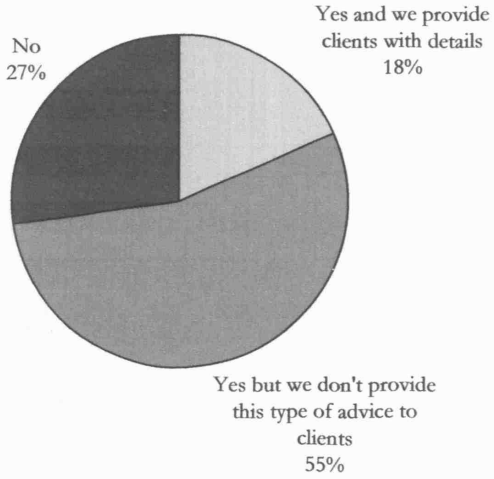

Figure 4.3.4 – Are you aware of the LCBP grant? Planning Consultants

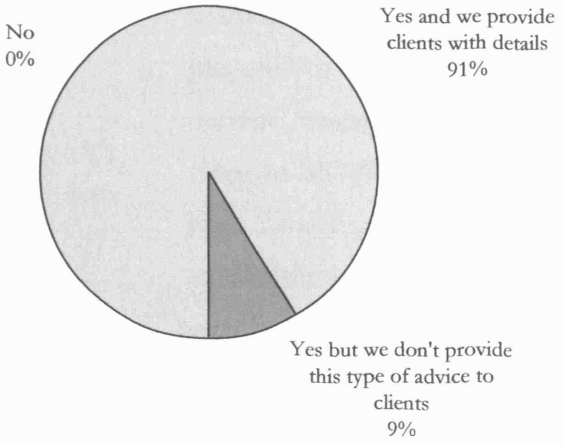

Figure 4.3.5 – Are you aware of the LCBP grant? Installers

More than three-quarters of householders were not aware of the grants. 33% of architects/technicians had not heard of the LCBP grants, and only 28% who had heard of them provided this information to their clients. A similar split in responses was recorded for the planning consultants, although only 18% of this group would pass this information to their clients. The results for these three groups suggest that there is a definite perception amongst householders that MGTs are too expensive, but this may not actually be a fully informed opinion. Whilst the majority of architects/technicians and planning consultants were aware of the grant programme, only a small proportion actually inform their clients, which may partly explain the lack of awareness amongst householders.

A further question was asked of the householders to gauge their expectations on cost; what would be the longest time over which they would want to see their money back? The results are shown in figure 4.3.6 below. 61% of householders said that the longest would be between 1-5 years, 11% would like to see it back within a year, and none of the respondents would be prepared to wait more than 15 years to see their initial investment returned.

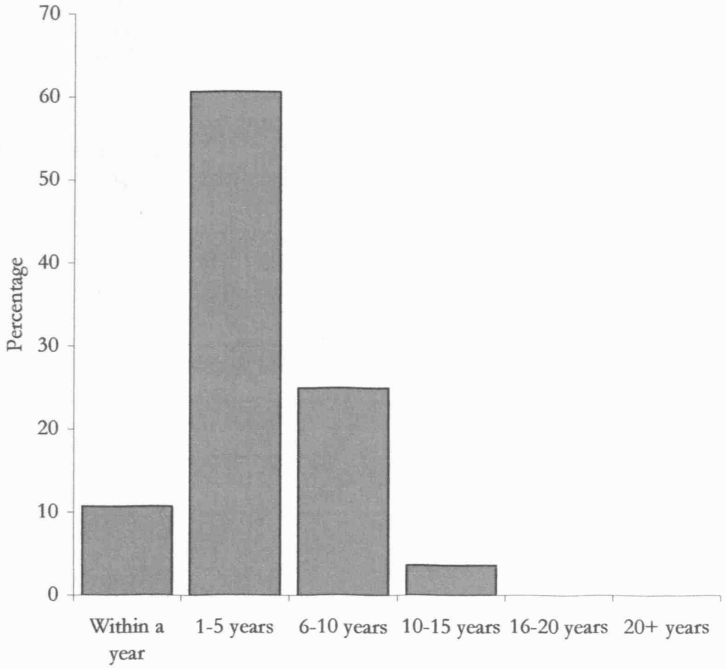

Figure 4.3.6 – Length of payback time

When compared with the likely pay back times for the different technologies advised by the DTI and EST, this length of time is only likely to be achieved for ground-source heat pumps (approx 13 years); however the majority of householders would not be prepared to wait this long. At current costs, none of the range of MGTs would be likely to meet householders' expectations in terms of pay-back times.

4.4 Awareness and Acceptance

As shown in figures 4.1.1, 4.1.2 and 4.1.3, the majority of respondents believe that human-induced climate change is happening, and the majority of householders think it is important to use more energy from renewable resources. It can therefore be presumed that there is a basic level of awareness amongst the public of the issues surrounding climate change and renewable energy. However, as demonstrated in figure 4.3.2, the majority of householders are not fully informed about important aspects of micro-generation, in particular the grants available to reduce the cost of a micro-generation installation.

Further questions were asked to try and understand the level of knowledge about the different MGTs. Householders were asked which of the seven MGTs defined within the Energy Act 2004 (see Appendix 1) they had heard of. As figure 4.4.1 shows, the technology which most respondents had heard of was solar water heating (100%), followed closely by micro wind turbines (90%). More than half of the respondents had heard of heat pumps, and some had knowledge of all the other technologies. This emphasises that there is a certain level of knowledge about micro-generation amongst the public; but .the fact that the most widely heard of technologies, solar water-heating and micro-wind turbines, are amongst the most expensive, with some of the longest payback times, is of concern.

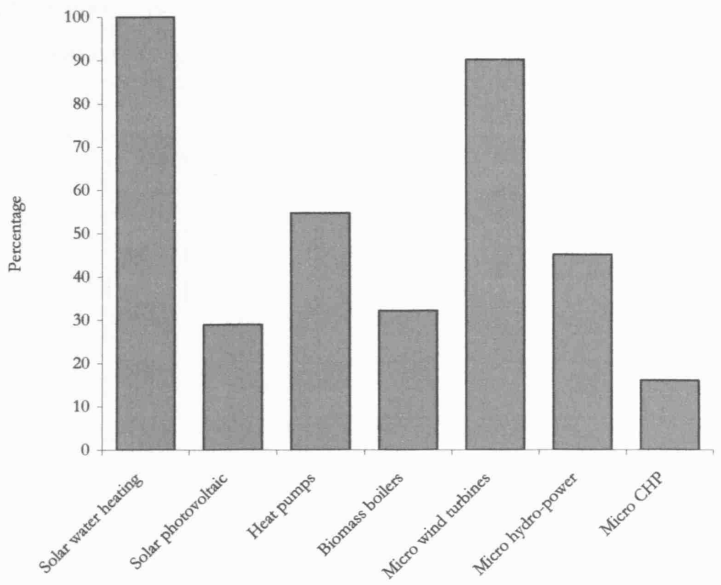

Figure 4.4.1 – Which of the following MGTs have you heard of? (Householders)

The popularity of these two technologies is further demonstrated in figure 4.4.2, which shows the responses of the DC officers to the question "Which of these MGTs do you regularly receive enquiries about?". Again, most respondents received regular enquiries about solar water heating (75%) and micro-wind turbines (75%), followed by solar photovoltaic (50%). Surprisingly, none of the respondents in this group

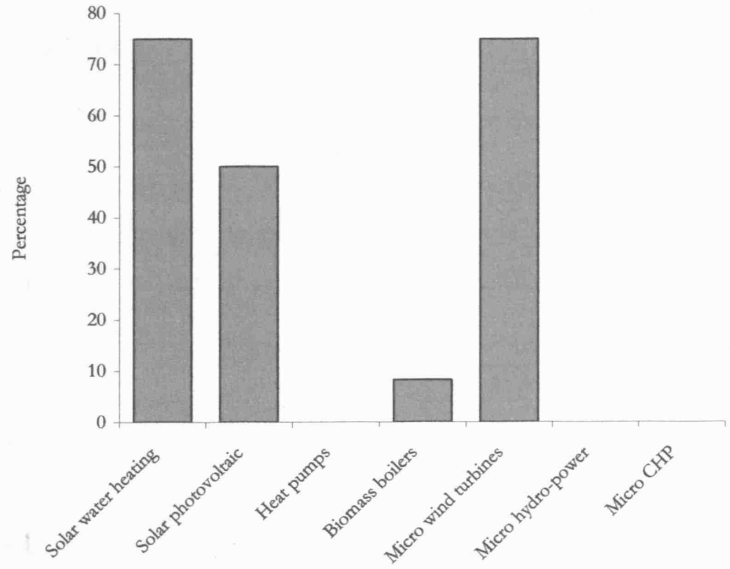

Figure 4.4.2 – Which of these MGTs does your department regularly receive enquires about (LPAs – DC)

regularly received enquiries about heat pumps, even though more householders claimed to have heard of these (55%) than solar photovoltaic (29%).

A further possible barrier identified within the literature, is the awareness of micro-generation installers. Householders who had installed MGT or who had an installation imminent, as well as the planning consultants and architects/technicians, were asked how easy it had been to find an installer to carry out the work. The results are shown in figure 4.4.3. Only two householders answered this question: one thought it had been neither easy nor difficult, and the other had found it difficult. Although many of the architects/technicians and planning consultants answered 'don't know', fewer than half of those who replied, answered 'easy' or 'very easy'. Experiences of finding an installer have varied, but the conclusion can be drawn that under half of respondents found it easy.

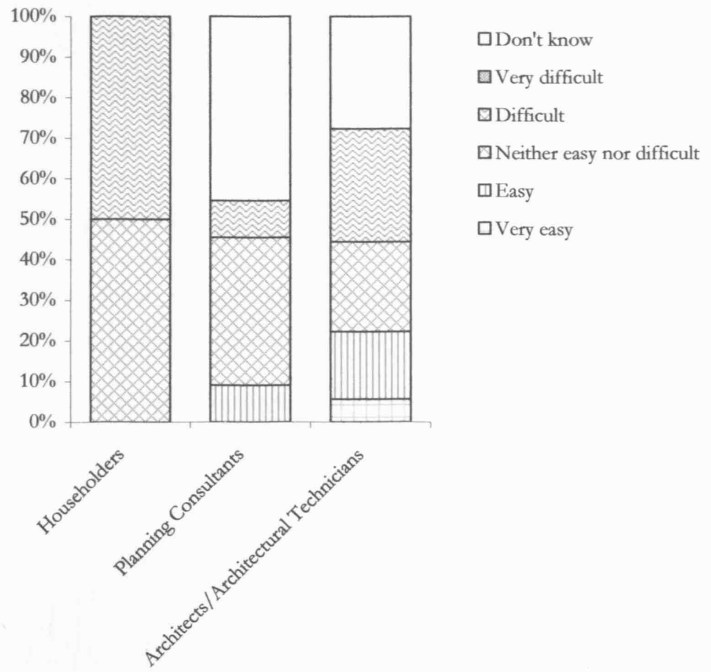

Figure 4.4.3 – How easy was/is it to find a micro-generation installer?

In order to shed additional light on this topic, the installers were asked whether or not they advertised; if so where, and if not, why not. Figure 4.4.4 shows that 78% of the respondents placed advertisements, and figure 4.4.5 shows that magazines/journals and the internet were the most common types of advertising used, followed by the yellow pages/phone book. Whilst the magazines/journals in which installers advertise may be specialist and therefore not readily accessible to the general public, the internet and yellow pages or phone book should be relatively easy for householders to access. Of those installers who did not advertise, 60% said that this was because not enough interest was generated from adverts, and 40% said that they had no need to advertise as enough interest was generated without advertising.

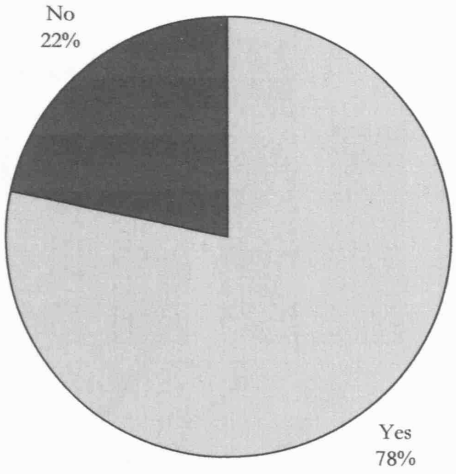

Figure 4.4.4 – Do you advertise? (Installers)

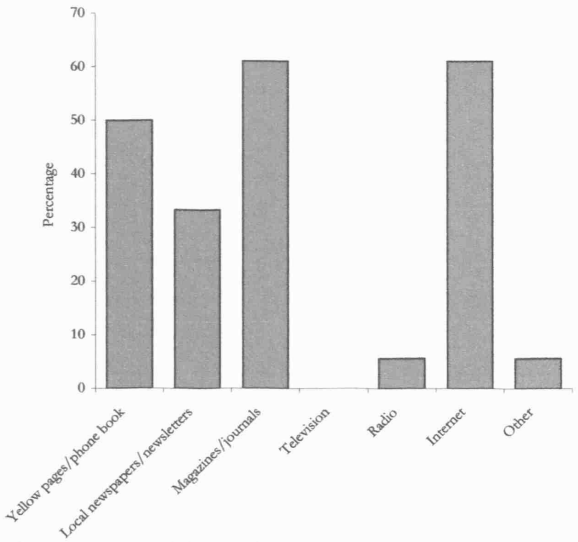

Figure 4.4.5 – Types of advertising used (Installers)

The literature review also identified the lack of accreditation of installers and products as a potential barrier. In May 2007, the DTI introduced the UK Microgeneration Certification Scheme, and installers were asked whether or not they were members. 70% of the installers were a member.

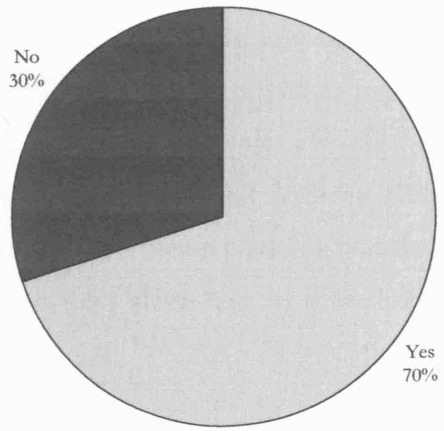

Figure 4.4.6 – Are you a member of the UK Microgeneration Certification Scheme?

The householders, planning consultants, architects/technicians and installers were also asked whether or not they thought this accreditation scheme would be beneficial. The responses are shown in figure 4.4.7. The majority of householders answered 'don't know', but all those who provided an answer considered that it would be beneficial. Similarly, many of the architects/technicians and planning consultants responded 'don't know', but of those that did provide an answer in both cases the majority thought it would be beneficial. The responses from the installers are interesting. Although the majority of this group are members of the certification scheme, a large proportion (55%) thought that it wouldn't be beneficial. Further analysis of these responses shows that of the accredited installers, only 64% thought that the scheme would be beneficial.

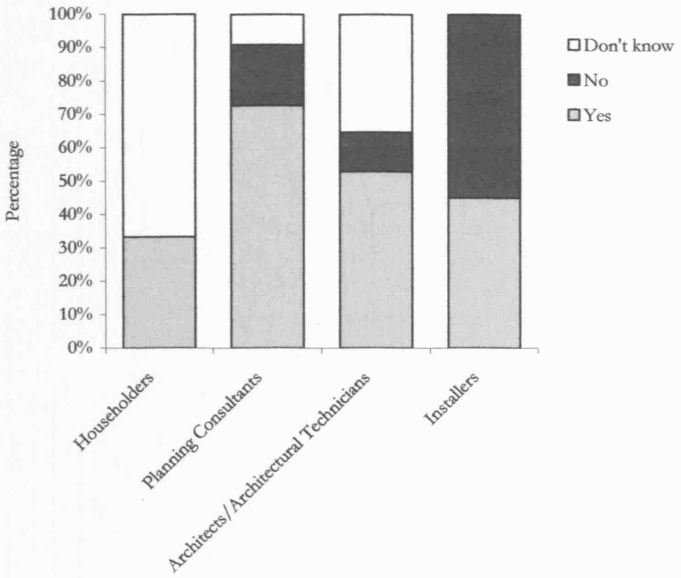

Figure 4.4.7 – Do you think that the UK Microgeneration Certification Scheme will be beneficial?

4.5 Regulation

The Planning system and the need to obtain planning permission for many micro-generation installations was identified as a potential barrier within the literature; although difficulty getting planning permission was identified by few respondents as a key reason for failing to proceed, this issue was investigated further. Householders were asked how difficult or easy they thought it would be to obtain planning permission for a micro-generation installation. The results shown in figure 4.5.1 show that the more householders thought it would be difficult (50%) or very difficult (13%) than not difficult (37%), and none thought it would be easy. This suggests that whilst planning is not seen as a key reason preventing a micro-generation installation, there is a perception amongst the public that planning permission would not be easy to be obtain.

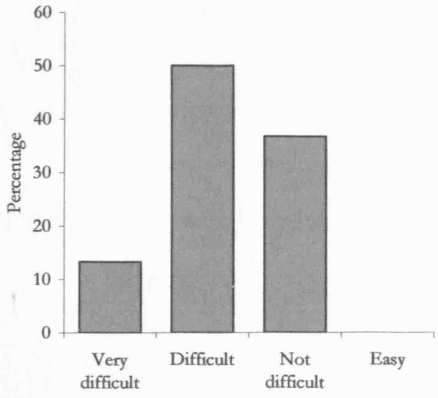

Figure 4.5.1 – How easy do you think it would be to get planning permission for a micro-generation installation? (Householders)

The main obstacles to gaining planning permission are identified in figure 4.5.2 overleaf. The location of the dwelling (e.g. in a Conservation Area) was the most widely stated obstacle amongst all of the groups.

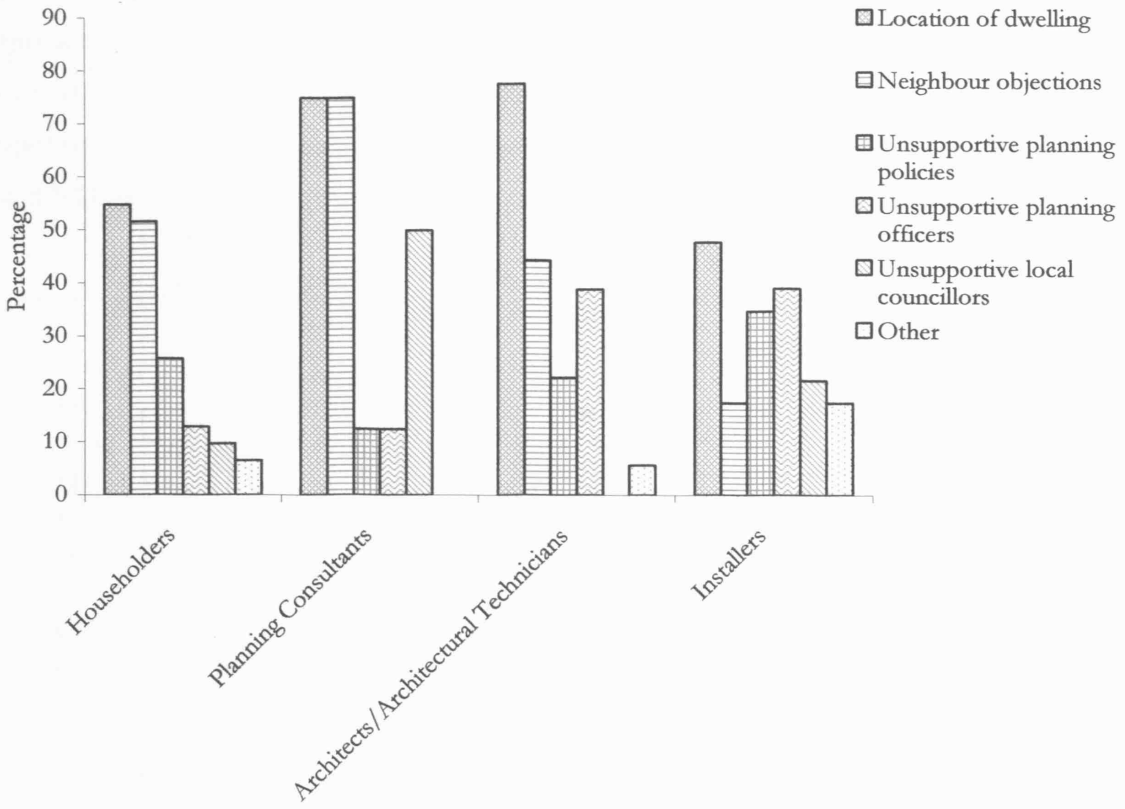

Figure 4.5.2 – Obstacles to obtaining planning permission

Neighbours' objections were considered to be the second biggest obstacle amongst householders, planning consultants and architects/technicians, but installers cited unsupportive planning officers as the second biggest obstacle, followed closely by unsupportive planning policies.

Another possible barrier identified within the literature was a lack of expertise within the LPAs in relation to renewable energy and micro-generation. The DC officers were asked whether or not their authority had an in-house renewable energy expert. As shown in figure 4.5.3, 42% of the LPA respondents had an in-house expert. Having an in-house expert is important, both in terms of ensuring that the planning department and officers are fully informed and able to assess planning applications for renewable energy schemes appropriately, as well as being a source of advice and information for the public.

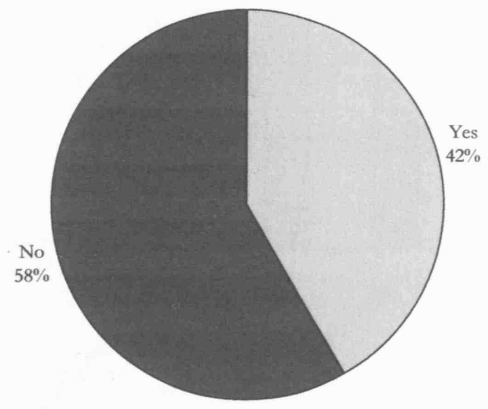

Figure 4.5.3 – Does your LPA have an in-house renewable energy expert?

The level of knowledge of MGTs possessed by those likely to be making decisions on planning applications involving MGTs, the DC officers and planning committee chairmen, was further assessed. Figures 4.5.4 and 4.5.5 show the DC officers' and planning committee chairmen's responses respectively to the question "How would you best describe your knowledge of each of these MGTs?".

None of the DC officers described their knowledge of any of the technologies as 'very good' and

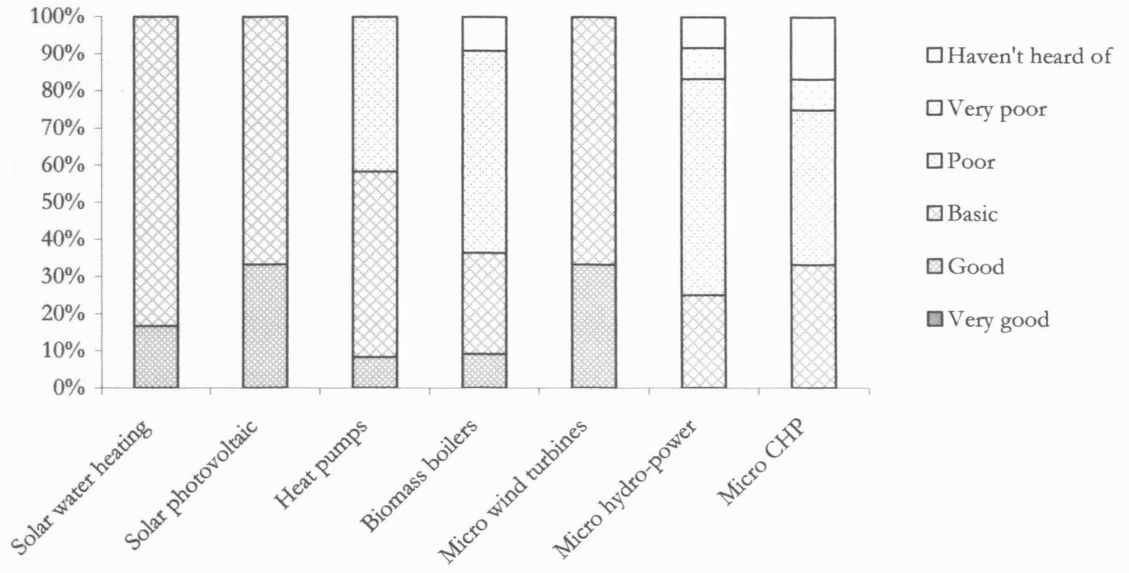

Figure 4.5.4 – Knowledge of MGTs (DC Officers)

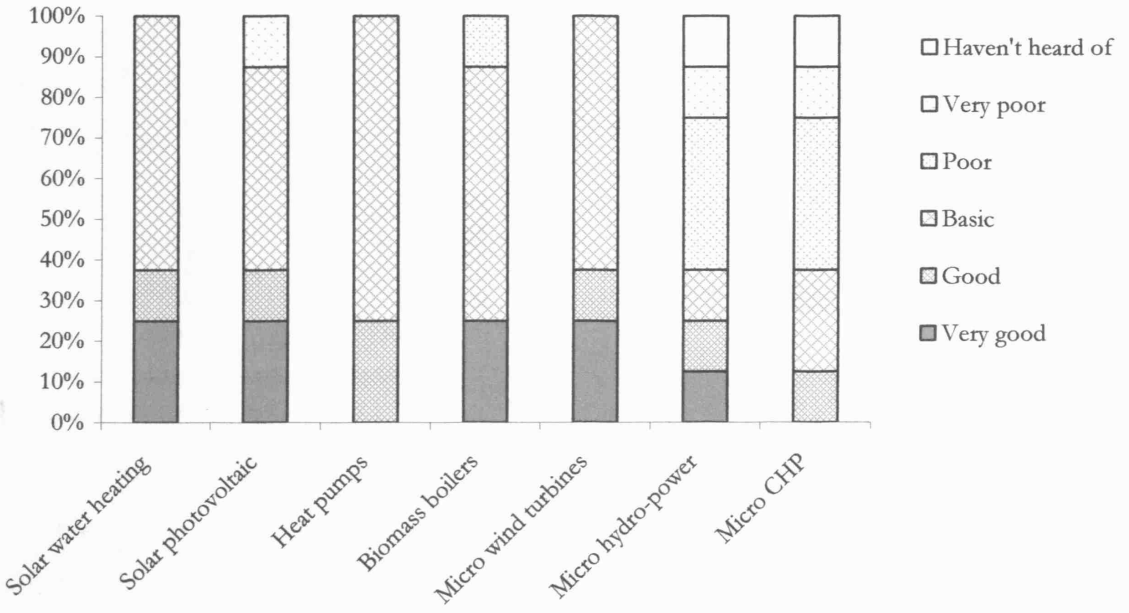

Figure 4.5.5 – Knowledge of MGTs (Planning committee chairmen)

few responded 'good' for any of the technologies. 'Basic' or 'poor' were the most common responses for all of the technologies.

In contrast, 25% of planning committee chairmen described their knowledge of solar water heating, solar photovoltaic, biomass boilers and micro wind turbines as 'very good'. However, the most common responses for all the technologies amongst the planning committee chairman were also 'basic' and 'poor'.

For authorities without an in-house expert, and those with one, the provision of training to both DC officers and planning committee members is important in ensuring that those making decisions possess the necessary knowledge to assess a scheme involving MGTs. These two groups were asked whether they had received training on renewable energy, and whether or not they thought there was sufficient training provided.

Figure 4.5.6 demonstrates that 75% of both DC officers and planning committee members have received training on planning and renewable energy. However, as figure 4.5.7 shows, most felt that the training they had received was not sufficient. There is a clear training need in this area for both these groups.

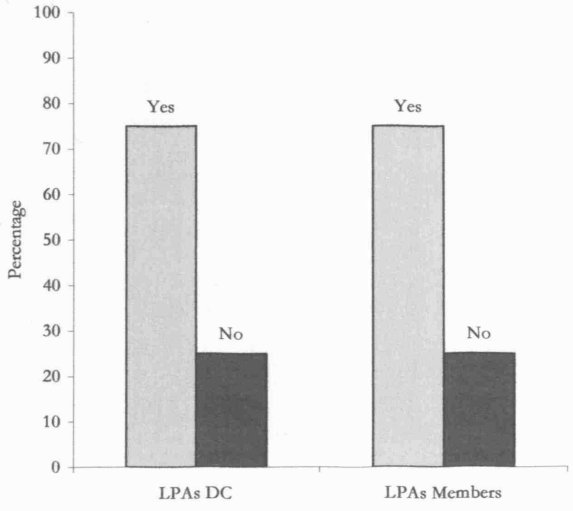

Figure 4.5.6 – Have you received training on planning and renewable energy?

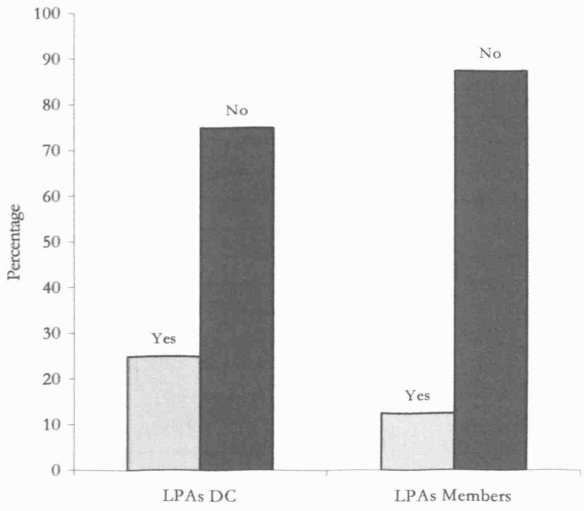

Figure 4.5.7 – Do you think that the training you received was sufficient?

DC officers will also be expected to negotiate with developers for providing micro-generation on larger residential schemes, in accordance with PPS 22, and the 'Merton-Style' policies which LDFs will be expected to contain. As another method of gauging their competence in this area

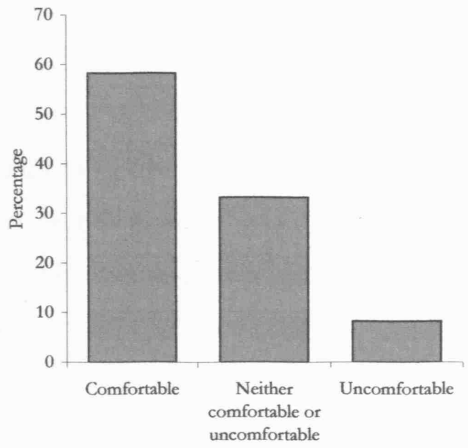

Figure 4.5.8 - How would you feel about negotiating on-site renewable energy provision with developers? (Planning Officers)

DC officers were asked how they would feel when entering into this type of negotiation. Figure 4.5.8 shows that the majority would feel comfortable in this type of negotiation, and only 8% thought that they would find this type of negotiation uncomfortable. Again, due to the limitations of the questionnaire it was not possible to investigate these responses to ascertain whether they were more a reflection of the officers' confidence in negotiation generally, or whether this is also reflective of their confidence in dealing with renewable energy issues.

Ambiguity in planning policy and legislation was cited in the literature as another possible barrier. As discussed on pages 9-10, there is a current consultation on amendments to the GPDO, to introduce a set of permitted development rights for householder micro-generation. Respondents

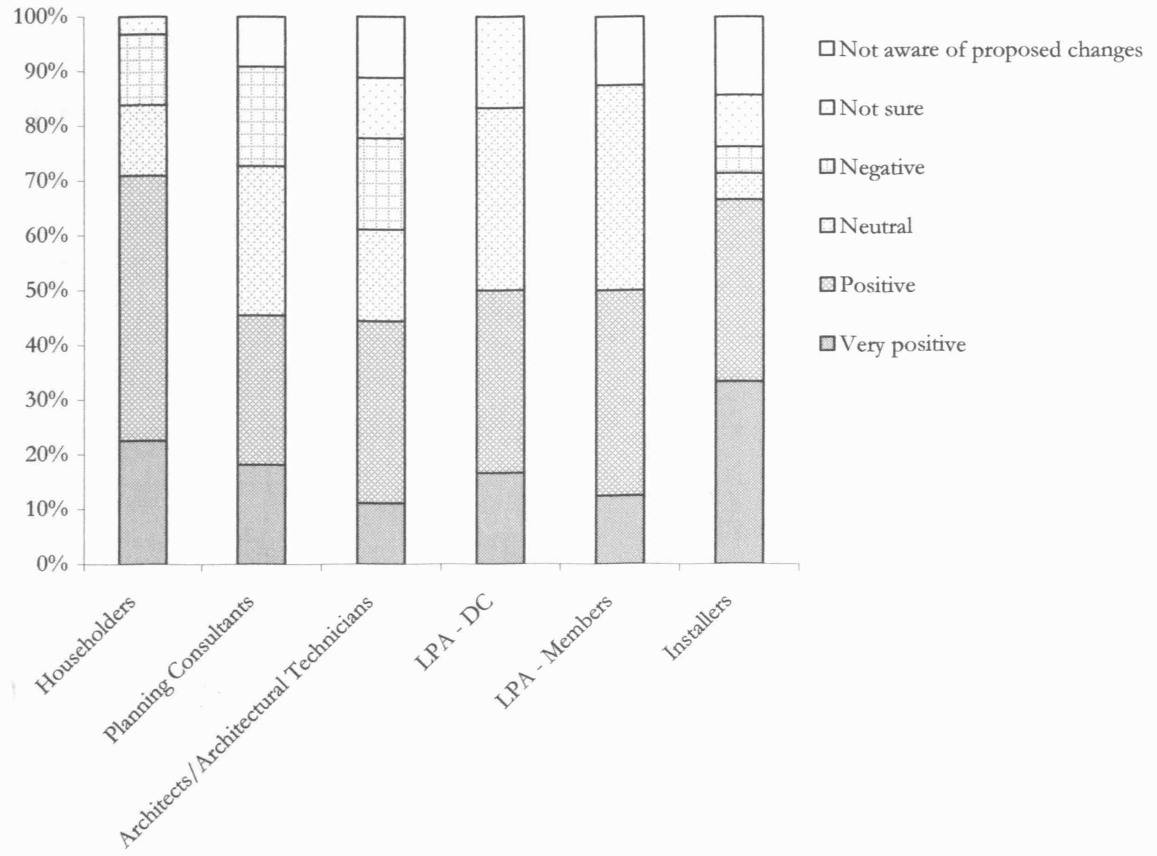

Figure 4.5.9 - Opinion on the proposed changes to the GPDO to introduce permitted development rights for householder micro-generation

were asked their opinion on this proposal. The responses are shown in figure 4.5.9.

For all of the groups, the proportion that thought the proposal is negative was smaller than the proportion who thought it is positive. The majority of householders and installers thought that the proposals were either positive or very positive; the only groups in which no respondents thought the proposals were negative were the DC officers and planning committee members. Respondents were asked to provide a brief reason for their answer to this question. Only a small number gave reasons; their answers show that their main concern was that reducing control over this type of development would result in negative visual impacts and adverse impacts on neighbours. One installer further argued that the knock-on impact of this would be to give micro-generation a negative image. The main reason for positive opinions was that it would make the planning system less restrictive and easier to understand, as well as increasing consistency, reducing the planners' workload and encouraging development of the micro-generation market.

The consistency of advice received from planners was further investigated. Planning consultants, architects/technicians and installers were asked how consistent the advice they received from LPAs was on the need for planning permission, and DC officers were asked how consistent they considered the advice they gave. Figure 4.5.10 shows the responses. Unsurprisingly, the majority of DC officers thought that their advice was consistent or fairly consistent, but this is not

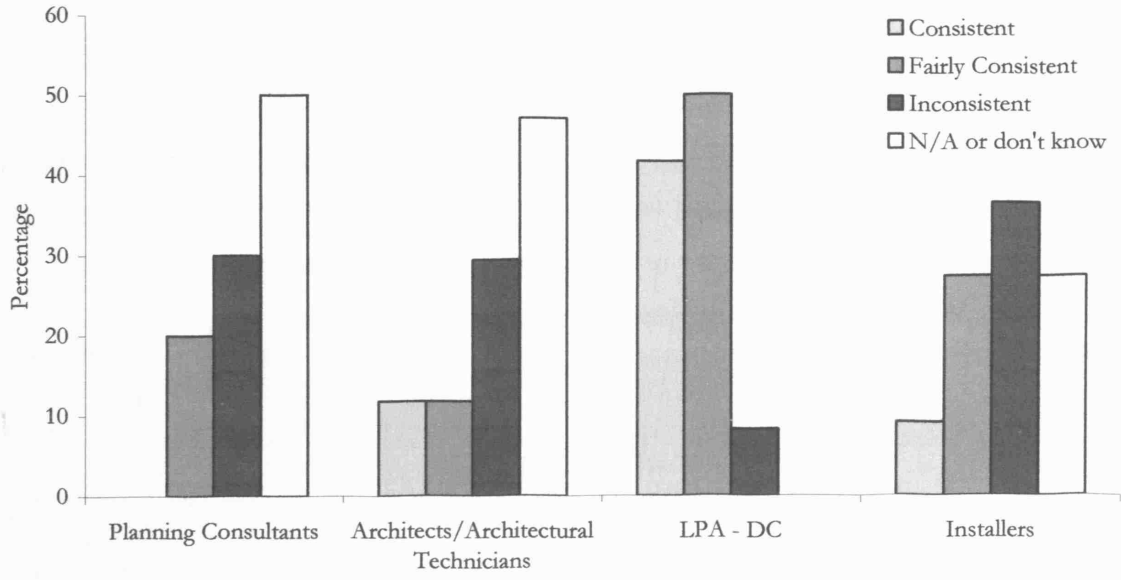

Figure 4.5.10 – How consistent is the advice that you give/receive regarding whether micro-generation installations require planning permission?

reflected in the responses of the other groups, all of which gave 'inconsistent' as the most common answer.

A lack of positive planning policies has also been suggested as a potential barrier. To this end, the Government have required all LPAs to include a 'Merton-style' in their LDFs. In order to assess whether this requirement is being followed, and whether these policies have been adopted. Policy officers were asked whether or not their current development plan contains a policy of this type, and whether their LDF would in the future. Figures 4.5.11 and 4.5.12 show the responses.

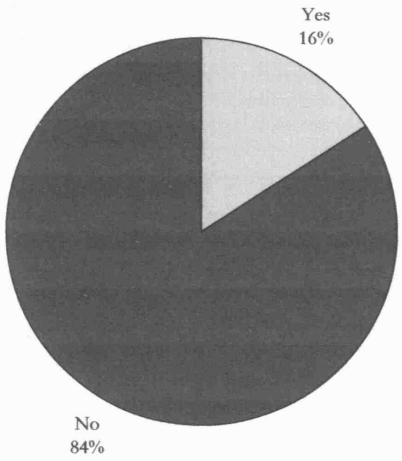

Figure 4.5.11 – Does your current development plan contain a Merton-style policy?

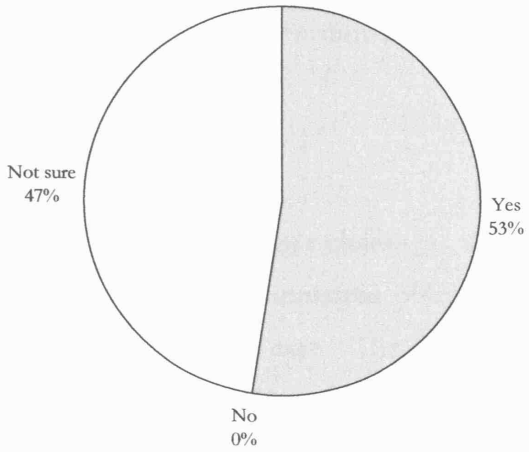

Figure 4.5.12 – Will/ does your LDF contain a Merton-style policy?

Only 16% of Policy officers reported that their current development plan contained this type of policy, and although over half said their LDF would, 47% weren't sure yet whether this would be the case. This would suggest that the timescales for LDF production for those 47% are such that if a Merton-style policy were included as required, adoption of this type of policy would still be a long way in the future. Of those respondents that did have a Merton-style policy within their LDF, table 4.5.1 below shows the size of development to which the policy would apply, and 4.5.2 shows the percentage of predicted future energy requirements which would be required to be met

Size of development to which policy would apply	Response
All residential development	18.2%
More than 10 dwellings	63.6%
Other	18.2%

Table 4.5.1

% of on-site renewables required by policy	Response
10%	45.5%
More than 10%	18.2%
Other	36.4%

Table 4.5.2

by on-site micro-generation.

The final barrier identified within the 'regulatory' category was the apparent lack of priority given to environmental issues within LPAs. DC officers and Policy officers were asked how important they considered the pursuit of environmental objectives (such as renewable energy provision) in terms of the overall priorities of the members of their Council. The planning committee chairmen were asked the same question. Figure 4.5.13 shows the responses.

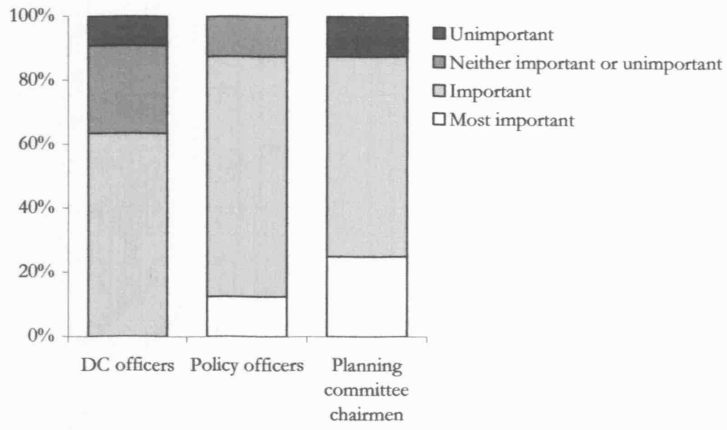

Figure 4.5.13 – Importance of pursuit of environmental objectives in relation to overall priorities of the Council

The results show a clear division of opinion amongst planning committee chairmen. It would seem that whilst the majority opinion was that the pursuit of environmental objectives was important, a small proportion (one respondent) felt this was not the case. The general trend amongst all three groups was that the pursuit of environmental objectives was seen to be important, although probably not the most important priority.

To further investigate this, the planning committee chairmen and DC officers were asked to rank a set of considerations in terms of their relative importance in determining a planning application for a housing scheme. The responses are shown in figures 4.5.14 and 4.5.15 respectively.

Fewer than 40% of planning committee chairmen considered the provision of on-site renewable energy to be either very important or important, in contrast to their attitude to impacts on neighbours, which 100% thought were very important or important. More than 10% felt that provision of on-site renewable energy was not at all important.

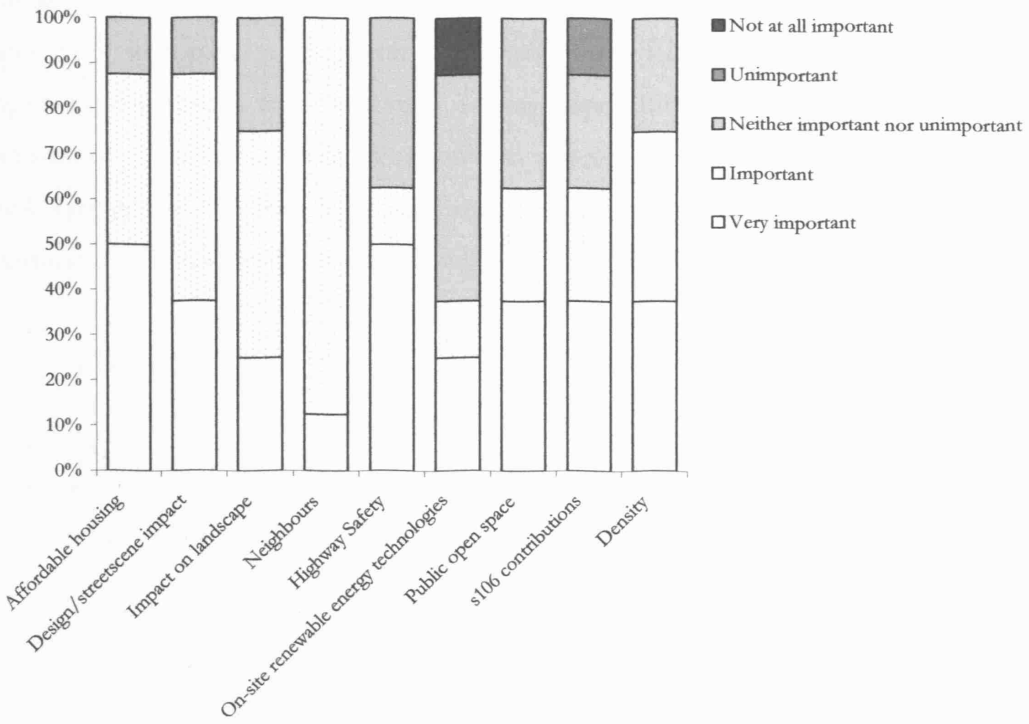

Figure 4.5.14 – Importance of factors in determining a planning application for a housing scheme (Planning committee chairmen)

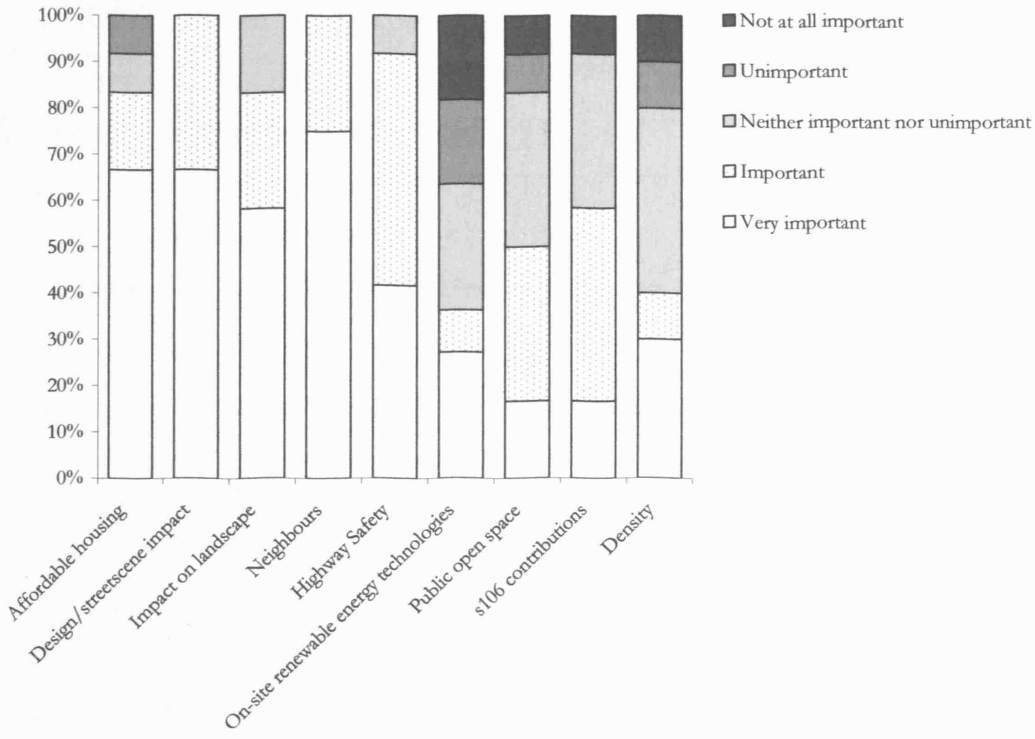

Figure 4.5.15– Importance of factors in determining a planning application for a housing scheme (DC officers)

Similarly, fewer than 50% of the DC Officers felt that provision of on-site renewable energy was either very important or important, whereas 100% felt that design/street-scene impact and impact on neighbours were important or very important. These responses probably reflect the importance placed upon these considerations at present, and as identified in figure 4.5.11, only a small proportion of LPAs have a Merton-style policy within their current development plan, requiring on-site renewable energy provision.

4.6 Technical

Figure 4.2.1. shows that technical difficulties were rarely cited as a main reason for not going ahead with a micro-generation installation, indeed only one householder identified this as a reason for failing to install. The only additional question asked in relation to technical barriers was the likely waiting time for an installation. As figure 4.6.1 shows, the majority of installations take place within 3 months, with only a small percentage of respondents suggesting a waiting time of more than 6 months.

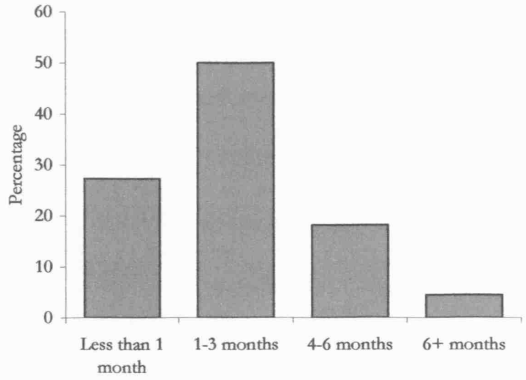

Figure 4.6.1 – Average waiting time (Installers)

4.7 Lack of Response from Developers

The total lack of response from developers may be an indication of their lack of interest in the topic. Additionally, the covering letter which accompanied the questionnaire may not have made it clear that the focus of the research was on new build as well as retro-fitting MGTs.

The methodology used for this group was identical to that used for the others; email addresses were obtained, the questionnaire was sent out, followed up by a reminder when no response was received.

5. CONCLUSIONS & SUGGESTIONS FOR FURTHER RESEARCH

5.1 Conclusions

Summary of key conclusions	
1.	Cost is the most significant barrier to wider take-up of micro-generation, both in terms of up-front costs and pay-back times.
2.	At present, none of the MGTs available will pay back their installation costs within householders' desired timescale.
3.	Although there is a general awareness of renewable energy and micro-generation, the public are poorly informed about the specific technologies and are unaware of the LCBP grant.
4.	Planning permission is not seen as a major barrier to micro-generation, but is perceived as being difficult to obtain, with the location of the dwelling, neighbour objections and unsupportive planning officers being the main obstacles.
5.	There is a lack of renewable energy expertise within planning departments, and a clear need for more training for DC officers and planning committee members.
6.	There is a lack of positive planning policies to encourage a wider take-up of micro-generation.
7.	The pursuit of environmental objectives is important in terms of the overall priorities of most Councils.

Table 5.1.1 – Summary of key conclusions

The research demonstrated a high level of awareness of climate change amongst all seven groups that responded. The total lack of response from developers indicates that this issue is probably low on their corporate/business agenda. There is a clear understanding amongst the public of the need to use more energy from renewable sources. However, there is evidence of a 'value-action' gap as described by the Sustainable Consumption Roundtable (2006, p5); the householders' attitudes appeared to be pro-renewable energy and micro-generation, yet less than half said that they had considered a micro-generation installation, and only 10% had actively pursued an installation. This conclusion is backed up by evidence from the architects/technicians, who recorded a low level of interest amongst clients in incorporating MGTs, and by the DC officers who reported a low level of enquiries about micro-generation.

Cost was identified as the biggest barrier to micro-generation by all groups; the up-front cost of the technologies was seen to be the biggest barrier, followed closely by the length of pay-back time. This confirms the general perception amongst academics and practioners in this field, that cost is a major deterrent, such as the conclusions drawn by the House of Commons Trade and Industry Committee (2007) that most MGTs are too expensive to be cost-effective. However, there is low awareness amongst householders of the LCBP grant which is available to offset some costs, and a relatively low awareness amongst planning consultants and architects/technicians. The fact that a low percentage of planning consultants or architects/technicians would provide their clients with this type of information is a further barrier to raising awareness of the grant programme. The perception of cost as the largest barrier may also be affected by householders' knowledge of MGTs; the most commonly heard of technologies are solar water-heating and micro wind turbines, which are amongst the most expensive technologies, and likely to have lengthy pay-back times.

Householders are only likely to invest in micro-generation if they will see their money back within 5 years. This is very unlikely to occur at present given the current costs of the technologies. This backs up Sauter and Wilson's (2007) research which suggested that customers would only be prepared to invest in MGTs if the pay-back time would be in the range of a few years. This finding also confirms the House of Commons Trade and Industry Committee's suggestion that most households which have installed micro-generation to date are "not necessarily motivated by a rational cost-benefit analysis" (2007, p28). The relatively short timescale over which householders want to see their investment returned may partly be explained by the fact that modern society is fairly transient, and MGTs cannot be taken to a new house if the occupiers decide to move. However, there is the possibility that a MGT installation may in the future add value in the housing market, or secure a quicker sale, which may help to offset some of the initial outlay for the technology. Further research should be conducted on this issue.

Whilst householders appear to be aware of renewable energy and micro-generation in general, their knowledge of the specific technologies is fairly limited; most were unaware of the grant programme. There is therefore a clear need to improve public awareness of micro-generation and the LCBP grant. Information about installers appears to be less problematic, experiences in finding an installer were varied, but most advertised, and although one of the most popular forms of advertising is in magazines/journals which may be aimed at specialists rather than the mass-

market, the internet was equally popular, and many also advertised in the yellow pages or phone book, meaning that finding installer details should be relatively straightforward.

The introduction of an accreditation scheme for installers and products is welcomed by householders, planning consultants and architects/technicians, but views are mixed amongst the installers themselves as to whether this would be beneficial. The questionnaires did not ask respondents to elaborate on this issue, and it is therefore unclear why there are such mixed opinions amongst the installers. This should be explored further.

The planning system is not perceived as a major barrier to micro-generation in the way suggested by the House of Commons Trade and Industry Committee (2007), but the majority of householders think planning permission would be difficult to obtain. The largest perceived obstacles to gaining planning permission are the location of the dwelling, and neighbours' objections. Amongst the installers it is felt that unsupportive planning officers are the second largest obstacle to getting planning permission. There is widespread support amongst both householders and installers for the proposed changes to the GPDO to create permitted development rights for micro-generation by householders. Respondents thought that this proposal would make the planning system less restrictive and easier to understand, as well as increasing consistency in advice and decision-making, and developing the micro-generation market. Amongst other groups the views were more mixed, although there were more positive responses than negative. Concerns about the proposal centre around the possibility of unrestricted installations having negative visual impacts, and adverse impacts on neighbours.

The lack of consistency in advice provided by the planners is a problem; the majority of planning consultants, architects/technicians and installers think that the advice they receive in inconsistent from case to case, and between different LPAs. This is likely to be largely a result of the ambiguity of current planning legislation; the introduction of specific permitted development rights for householder micro-generation should remove some of the inconsistency arising from differing interpretations of the existing legislation.

There is a clear need for additional training amongst DC officers and planning committee members. Whilst most have received training on planning and renewable energy, the majority thought that it had been insufficient. The lack of an in-house renewable-energy expert in more than half of the LPAs sampled emphasises the critical need for training. The level of knowledge

about most of the MGTs amongst decision-makers (DC officers and planning committee members) is at best basic, and sometimes poor. This confirms the view of authors such as Syngellakis et al (2006), Morris (2006) and Royal (2006) that there is a significant lack of expertise within LPAs. Nonetheless, the majority of DC officers felt confident in negotiating with developers for provision of on-site renewable energy technologies. This is an interesting response, but may be a reflection of the officers' confidence in negotiation generally, rather than their expertise in dealing with renewable energy issues. Again, a limitation of the research method was the inability to investigate further matters such as this.

Although not cited as a main barrier, there is evidence of a lack of positive planning policies to encourage micro-generation. Few LPAs currently have a Merton-style policy within their development plan, and there was considerable uncertainty amongst policy officers about whether or not their LDFs would contain this type of policy. The level of uncertainty would suggest that the LDFs are at an early stage of production, and therefore even if they do contain this type of policy in line with the Government's requirements, it is unlikely to be adopted in the near future.

Amongst most LPAs, the pursuit of environmental objectives such as renewable energy provision is seen to be important in terms of the overall priorities of the council, although probably not the most important priority. At present, provision of on-site micro-generation is not seen as an important consideration in determining a planning application for a housing scheme, but this probably reflects the fact that few current development plans contain a policy requiring this.

Technical issues were not perceived to be a major barrier, which directly conflicts with the views of Jager-Waldau (2007) who argued that these were the most significant barrier. This may be because householders are put off investing in a MGT by the cost, before they have even begun to investigate the technicalities of an installation.

A full summary of the research findings is provided at Appendix 5.

5.2 Suggestions for Further Research

There are a number of areas where further research would be beneficial, which was not possible to undertake within the constraints of this paper. These are set out in table 5.2.1 overleaf.

Directions for further research	
1.	Further investigation of the responses received; many respondents indicated their willingness to be contacted further.
2.	Comparison between current government initiatives designed to encourage take-up of micro-generation and the barriers identified here.
3.	Installers' opinions of the UK Microgeneration Certification Scheme and reasons for reservations about this scheme.
4.	Detailed analysis and investigation of householders' "cost-benefit" analysis and at what point they would become prepared invest in a micro-generation technology.
5.	Engagement with developers to investigate their opinions.
6.	Investigation of whether MGTs add to the value of a house on re-sale, and if so to what extend this off-sets the initial cost of the technology.

Table 5.2.1 – Directions for further research

5.3 Limitations To Research

A number of limitations to this research have been identified, and are summarised in table 5.3.1 below.

Limitations to the research	
1.	Use of the East of England as a case-study area for the research limits the ability to generalise from the research findings (section 3.1).
2.	Use of East Cambridgeshire District as case-study area for householders further limits the ability to generalise from the research findings (section 3.4).
3.	Low response rates received (section 4).
4.	Inability to investigate responses further due to use of self-completion questionnaire.
5.	Use of population sub-sets for sampling (section 3.4).

Table 5.3.1 – Limitations to the research

Bibliography

Askew, J. and Edmundson, T. 2007 'Energy aims threatened' *Planning,* 08/06/07, p10.

Association of Environment Conscious Builders, 2007 *Low Carbon Buildings Programme Re-Launch* [online]. Available from: http://www.aecb.net/networkfiles [accessed 3rd July 2007].

Baker, L. 2007 'Arup backs sector to lower emissions' *Planning,* 01/06/07, p8.

BBC News online, 2007 *DTI rethinks green home subsidies,* Thursday 22nd March 2007 [online]. Available from: http://www.bbc.co.uk/1/hi/business/6480267.stm [accessed 3rd July 2007].

Berry, S. 2005 'Micro capacity gains status' *Planning,* 11/11/05, p8.

Bettison, P. 2006 'Councils tackle green issue' *Planning,* 24/11/06, p15.

Bryman, A. 2004 *Social Research Methods.* Oxford University Press, Oxford.

Cambridgeshire County Council, 2005 *Tackling Climate Change in Cambridgeshire,* Cambridgeshire County Council, Cambridge.

Carnell, P. 2007 'Expert queries councils' desire to endorse urban wind turbines' *Planning,* 13/07/07, p5.

Collins, J. 2004 *A Micro-generation manifesto,* Green Alliance, London.

Cooper, Y. 2006 *Ministerial Statement, Communities and Local Government – PPS 22, 8th June 2006.* Available from: http://www.tcpa.org.uk/press_files/pressreleases_2006 [accessed 1st April 2007].

DCLG, 2006 *Consultation Planning Policy Statement: Planning and Climate Change. Supplement to Planning Policy Statement 1,* CLG, London. Available from: http://www.communities.gov.uk [accessed 1st April 2007].

DCLG, 2007 *Changes to Permitted Development Consultation Paper 1: Permitted Development Rights for Householder Micro-generation,* CLG, London. Available from: http://www.communities.gov.uk [accessed 1st May 2007].

DEFRA, 2007 *UK Climate Change Strategic Framework,* DEFRA, London. Available from: http://www.defra.gov.uk [accessed 1st April 2007].

Del Rio, P. 2007 'Encouraging the implementation of small renewable energy CDM projects: An economic analysis of different options' *Renewable and Sustainable Energy Reviews,* 11, p1361-1387.

Dewar, D. 2006 'Councils commit to cleaner energy' *Planning,* 28/07/06, p3.

Dobbyn, J. and Thomas, G. 2005 *Seeing the light: the impact of micro-generation on our use of energy,* Sustainable Development Commission. Available from: http://www.sd-commission.org.uk/publications [accessed 21st July 2007]

DTI, 2003 *Our energy future – creating a low carbon economy,* TSO, London.

DTI, 2006 *Our Energy Challenge: Power from the people,* The Government's Microgeneration Strategy, DTI, London.

DTI, 2007 *Review of Distributed Generation,* DTI, London. Available from: http://www.berr.gov.uk [accessed 21st July 2007]

DTI, 2007(a) *Energy Trends: March 2007,* National Statistics, London. Available from: http://www.berr.gov.uk [accessed 21st July 2007].

DTI, 2007(b) *Energy Trends: June 2007,* National Statistics, London. Available from: http://www.berr.gov.uk [accessed 21st July 2007].

DTI, 2007(c) *Extra £6m for green householders – Darling,* Press release 21st March 2007. Available from: http://www.gnn.gov.uk [accessed 3rd July 2007].

DTI, 2007(d) *Microgenerating Money,* News release 25th May 2007. Available from: http://www.berr.gov.uk [accessed 21st July 2007].

Early, C. 2007 'Control relaxed on household energy' *Planning,* 06/04/07, p1.

Elliott, D. 2000 'Renewable energy and sustainable futures' *Futures,* 32, p261-274.

Ellis, H. 2006 'Climate clock counts down' *Planning,* 06/10/06, p15.

Energy Saving Trust, 2005 *Potential for Micro-generation: Study and Analysis* [online]. Available from: http://www.berr.gov.uk [accessed 3rd July].

Energy Saving Trust, 2006 *Meeting the 10 per cent target for renewable energy in housing – a guide for developers and planners,* EST, London.

Energy Saving Trust, 2007 *Ground source heat pumps* [online]. Available from: http://www.energysavingtrust.org.uk [accessed 3rd July 2007].

Energy Saving Trust, 2007(a) *Hydroelectricity* [online]. Available from: http://www.energysavingtrust.org.uk [accessed 3rd July 2007].

Energy Saving Trust, 2007(b) *Biomass* [online]. Available from: http://www.energysavingtrust.org.uk [accessed 3rd July 2007].

Energy Saving Trust, 2007(c) *Solar water heating* [online]. Available from: http://www.energysavingtrust.org.uk [accessed 3rd July 2007].

Energy Saving Trust, 2007(d) *Solar electricity* [online]. Available from: http://www.energysavingtrust.org.uk [accessed 3rd July 2007].

Energy Saving Trust, 2007(e) *Microwind* [online]. Available from: http://www.energysavingtrust.org.uk [accessed 3rd July 2007].

Faiers, A. and Neame, C. 2006 'Consumer attitudes towards domestic solar power systems' *Energy Policy,* 34, p1797-1806.

Footner, J. 2006 'Decentralising to cut waste' *Planning,* 03/11/06, p17.

Fyson, A. 2006 'Fyson on...the need to make microtechnology a domestic issue' *Planning,* 30/06/06, p10.

Gillespie, E. 2006 'Co-operate for the climate' *Planning,* 27/10/06, p22.

Gillman, S. 2006 'Authorities given renewables edict' *Planning,* 16/06/06, p3.

Gillman, S. 2006(a) 'Energy review set to revamp system' *Planning,* 14/07/07, p9.

Gillman, S. 2006(b) 'Review touts nuclear return' *Planning,* 21/07/06, p8.

Gillman, S. 2006(c) 'Micro energy backer' *Planning,* 11/08/06, p13.

Greenpeace, 2007 *Future Investment,* Greenpeace, London.

Hain, J., Ault, G., Galloway, S., Cruden, A. and McDonald, J. 2005 'Additional renewable energy growth through small-scale community orientated energy policies' *Energy Policy,* 33, p1199-1212.

HM Government, 2004 *Energy Act 2004,* TSO, Norwich. Available from: http://www.opsi.gov.uk/ACTS/acts2004/20040020.htm [accessed 1st March 2007].

HM Government, 2007 *Planning for a Sustainable Future: White Paper,* HMSO, Norwich.

HM Government, 2007(a) *Meeting the Energy Challenge: A White Paper on Energy,* TSO, Norwich.

HM Government, 2007(b) *Draft Climate Change Bill,* DEFRA, London.

House of Commons Trade and Industry Committee, 2007 *Local energy – turning consumers into producers,* First Report of Session 2006-2007, TSO, London.

IPCC, 2007 *Climate Change 2007: Mitigation,* Contribution of Working Group III to the Fourth Assessment Report of the IPCC, CUP, Cambridge.

Jäger-Waldau, A. 2007 'Photovoltaics and renewable energies in Europe' *Renewable and Sustainable Energy Reviews,* 11, p1414-1437.

Jefferson, M. 2006 'Sustainable energy development: performance and prospects' *Renewable Energy,* 31, p571-582

Kalogirou, S. 2004 'Environmental benefits of domestic solar energy systems' *Energy Conservation and Management,* 45, p3075-3092.
Keirstead, J. 2007 'The UK domestic photovoltaics industry and the role of central government' *Energy Policy,* 35, p2268-2280.

Kelly, R. 2006 'Global issues spark call for united action' *Planning,* 15/12/06, p14.

Kelly, R. 2007 *Global Warming, Local Leadership,* Speech given at the Green Alliance summit on local government and climate change, 4th April 2007. Available from: http://www.communities.gov.uk/index.asp?id=1509388 [accessed 6th April 2007].

Kliman, A. 2006 'Planners take front line role' *Planning,* 20/10/06, p17.

Local Government Association (LGA), 2005 *Greening communities: ideas into action. Leaflet 1 - Energy and Climate Change.* London, LGA.

London Renewables, 2004 *Integrating renewable energy into new developments: Toolkit for planners, developers and consultants,* GLA, London. Available from: http://www.london.gov.uk/mayor/environment/energy/docs/renewables_toolkit.pdf [accessed 3rd July 2007].

Low Carbon Buildings Programme, 2007 *About the grant programme* [online]. Available from: http://www.lowcarbonbuildings.org.uk/about [accessed 3rd July 2007].

Low Carbon Buildings Programme, 2007(a) *Householders* [online]. Available from: http://www.lowcarbonbuildings.org.uk/how/householders [accessed 3rd July 2007].

McEvoy, D. 2006 'Climate goals need balance' *Plannning,* 17/11/06, p8.

Miliband, D. 2007 *Parliamentary Statement on Climate Change and Energy, 13th March 2007,* DTI, London. Available from: http://www.dti.gov.uk/energy/environment/climate-change [accessed 1st April 2007].

Morris, H. 2006 'Capital sets the pace in zero-carbon campaign' *Planning,* 04/08/06, p9.

Morris, H. 2006(a) 'Stern underlines key planning role' *Planning,* 03/11/06, p3.

Morris, H. 2006(b) 'Stern warns of climate cost' *Planning,* 10/11/06, p8.

Morris, H. 2007 'A release of energy' *Planning,* 11/05/07, p19.

ODPM, 2004 *Planning Policy Statement 22: Renewable Energy,* TSO, Norwich.

ODPM, 2004(a) *Planning for Renewable Energy: A Companion Guide to PPS 22,* TSO, Norwich.

ODPM, 2004(b) *The Planning Response to Climate Change: Advice on Better Practice,* ODPM, London.

Office for National Statistics (ONS), 2007 *Neighbourhood Statistics.* Available from: http://www.statistics.gov.uk [accessed 16th August 2007].

Paish, O. 2002 'Small hydro power: technology and current status' *Renewable and Sustainable Energy Reviews,* 6, p537-556.

Potter, S. 2006 *Doing Postgraduate Research,* Sage, London.

Red Book Live, 2007 *Microgeneration* [online]. Available from: http://www.redbooklive.com/page.jsp?id=135 [accessed 3rd July 2007].

Renewables East, 2005 *Mass Market Renewables – Overview* [online]. Available from: http://www.renewableseast.org.uk/MassMarketRenewables/Overview.aspx [accessed 3rd July 2007].

Royal, R. 2006 'Developers face battle to overcome nimbyism' *Planning,* 24/11/06, p9.

Sauter, R. and Watson, J. 2007 'Strategies for the deployment of micro-generation: Implications for social acceptance' *Energy Policy,* 35, p2770-2779.

Sowden, D. 2007 'Micropower fights back' *Planning,* 22/06/07, p10.

Sustainable Consumption Roundtable, 2006 *I will if you will: Towards Sustainable Consumption,* Sustainable Consumption Roundtable, London.

Sustainable Development Commission, 2005 *Climate Change Programme Review,* The submission of the Sustainable Development Commission to HM Government,

Swetnam, D. 2004 *Writing your Dissertation,* How To Books, Oxford.

Syngellakis, K. Carroll, S. and Robinson, P. 2006 'Small wind power' *ReFocus,* March-April 2006, p40-45. Available from: http://www.re-focus.net [accessed 1st April 2007].

The A to Z of Building, 2007 *Grant Funding for Micro-Renewables runs dry 12 days into the month* [online]. Available from: http://www.azobuild.com/news.asp?newsID=2999 [accessed 11th March 2007].

Town and Country Planning Association, 2003 *TCPA Policy Statement: Climate Change,* TCPA, London.

Town and Country Planning Association, 2006 *TCPA Policy Statement: Planning for Sustainable Energy,* TCPA, London.

Town and Country Planning Association, 2006(a) *Sustainable energy by design,* TCPA, London.

Unattributed, 2006 'Councils sign up to renewables pledge' *Planning,* 09/06/06, p1.

Unattributed, 2006(a) 'Trust demands micro-generation boost' *Planning,* 16/06/06, p5.

Unattributed, 2007 'Carbon goals set to falter' *Planning,* 09/02/07, p1.

Unattributed, 2007(a) 'Green skills gap targeted' *Planning,* 30/03/07, p5.

Unattributed, 2007(b) 'Councils gain target power' *Planning,* 06/07/07, p1.

Verbeeck, G. and Hens, H. 2005 'Energy savings in retrofitted dwellings: economically viable?' *Energy and Buildings,* 37, p747-754.

Watson, J. 2004 'Co-provision in sustainable energy systems: the case of micro-generation' *Energy Policy,* 32, p1981-1990.

Whittington, H. 2002. 'Electricity generation:options for reduction in carbon emissions' *Philosophical Transactions of the Royal Society of London A,* 360, p1653-1668.

Willis, R. 2007 'Low carbon challenge' *Planning,* 04/05/07, p19.

APPENDIX 1 – Definition of micro-generation

Extract from the Energy Act 2004, section 82:

(6) For the purposes of this section "microgeneration" means the use for the generation of electricity or the production of heat of any plant-

(a) which in generating electricity or (as the case may be) producing heat, relies wholly or mainly on a source of energy or a technology mentioned in subsection (7); and

(b) the capacity of which to generate electricity or (as the case may be) to produce heat does not exceed the capacity mentioned in subsection (8).

(7) Those sources of energy and technologies are-

(a) biomass;

(b) biofuels;

(c) fuel cells;

(d) photovoltaics;

(e) water (including waves and tides);

(f) wind;

(g) solar power;

(h) geothermal sources;

(i) combined heat and power systems;

(j) other sources of energy and technologies for the generation of electricity or the production of heat, the use of which would, in the opinion of the Secretary of State, cut emissions of greenhouse gases in Great Britain.

(8) That capacity is-

(a) in relation to the generation of electricity, 50 kilowatts;

(b) in relation to the production of heat, 45 kilowatts thermal.

APPENDIX 2 – Demographics

From Office for National Statistics, last accessed at www.statistics.gov.uk on 16th August 2007.

Statistic		East Cambs	East of England	England
Households	Count	29,780	2,231,974	20,451,427
2001 Population: All people	Count	73,214	5,388,140	49,138,831
2001 Population: Males	%	49	49	49
2001 Population: Females	%	51	51	51
Ethnic group: White	%	97.9	95.12	90.92
General health: Not good	%	7.06	7.60	9.03
Economically active: Unemployed	%	2.21	2.60	3.31
16-74: No qualifications	%	28.32	27.94	28.85
Households with no cars or vans	%	14.78	19.80	26.84

APPENDIX 3 – Comparability of questions

QUESTION	Householders	Developers	Planning Consultants	Architects/ Technicians	DC Officers	Policy Officers	Planning committee chairmen	Installers
COST								
Costs in comparison to savings	15		9	10				9
Awareness of grants	16		10	11				10
Money-back time	17							
Increase to cost of development		10						
AWARENESS & ACCEPTANCE								
Lack of information regarding micro-renewable technologies								
Knowledge of technologies	3	2	3	3	5		10	
Guidance available		13						
Guidance required		14						
Technologies enquired about					4			
Difficulty finding installers								
Advertising								11-13
Ease of finding installers	8	6	11	12				
Is installer accredited								14
Accreditation of installers beneficial	9	7	12	13				15
Public acceptance of climate change								
Belief in Climate Change	1	19	22	24	20	11	18	25
Importance of using RE	2							
REGULATORY								
Lack of renewable energy expertise in LPAs								
Expertise within LPA					6			
Members planning training							5	
RE training – attendance					7		6	
RE Training – sufficient					8		8	
Frequency of training							7	
SPG/SPD on RE						8/9		
Negotiation with developers					14			
Member familiarity with policy							3	
Member involvement in policy							4	
Member knowledge							9	
Lack of prioritisation of environmental issues								
Pursuit of environmental objectives					19	10	12	
Planning Application factors					18		13	
Approach to renewable energy proposal							11	
Lack of positive planning policies								
Development Plan – Merton policy					11	1		
LDF – Merton policy					12	2		
10% requirement – opinions	22	9	21	23	13		15	24
Objections likely?					15		16	
Objections to 10% by group					16	6		
Reasons for objections to 10%					17	7	17	
Ease of gaining PP	7/19		14	16				18
Obstacles to gaining PP	20		15	17				19
Ambiguity in planning policy and legislation								

Changes to PD – opinions	21		20	22	10		14	23
Consistency of PD advice			13	15	9			17
Pre-application advice – sought		15	16	18				20
Pre-application advice – when		16	17	19				
Pre-application advice – quality		17	18	20				21
Pre-application advice – problems		18	19	21				22
Pre-application advice - members							2	
Planning General								
Proportion requiring PP				14				16
TECHNICAL								
Waiting times	10							8
GENERAL								
Demand								
Proportion of clients interested			4	4				
Proportion going ahead			5	5				4
Installed or intending to install	4							
Considered installation	11							
Popularity of tech with clients				6				
Enquiries received per week					1			
Combined barriers/issues								
Reasons for installing	14	5	6	7				5
Reasons for not installing	12		7	8				6
Main reason for not installing	13		8	9				7
ABOUT								
Which technology installed	5							
PP required for installation	6							
Types of work			1	1				
Client type			2	2				2
Enquiries received from					2			3
Types of work enquired about					3			
Time served on committee							1	
Installer type								1

APPENDIX 4 – Final Questionnaires

DOMESTIC MICRO-SCALE RENEWABLE ENERGY QUESTIONNAIRE

1. Do you believe that human-caused climate change is happening? *Tick one box only*

- Yes ☐
- No ☐
- Not sure ☐

2. How important do you think it is to use more energy from renewable sources? *Tick one box only*

- Very important ☐
- Important ☐
- Unimportant ☐
- Not at all important ☐

3. Which of the following micro-renewable technologies have you heard of? *Tick as many as apply*

- Solar water heating ☐
- Solar photovoltaic ☐
- Heat pumps (ground, air or water source) ☐
- Biomass boilers ☐
- Micro wind turbines ☐
- Micro hydro-power ☐
- Micro CHP (combined heat and power) ☐
- None of the above ☐

4. Have you installed/are you intending to install any of the micro-renewable technologies listed above? *Tick one box only*

- Yes ☐
- No ☐

If 'No' please go to Q11, if Yes' please proceed to Q5

5. Which of the following micro-renewable technologies have you installed/are you going to install? *Tick as many as apply*

- Solar water heating ☐
- Solar photovoltaic ☐
- Heat pumps (ground, air or water source) ☐
- Biomass boilers ☐
- Micro wind turbines ☐
- Micro hydro-power ☐
- Micro CHP (combined heat and power) ☐

6. **Did you require planning permission for the installation?** *Tick one box only*

Yes	☐
No	☐

7. **How easy was it to get planning permission?** *Tick one box only*

Very easy	☐
Easy	☐
Neither easy nor difficult	☐
Difficult	☐
Very difficult	☐
N/A	☐

8. **How easy was it to find an installer?** *Tick one box only*

Very easy	☐
Easy	☐
Neither easy nor difficult	☐
Difficult	☐
Very difficult	☐

9. **Do you think introducing a standard accreditation system for renewable energy installers (the UK Microgeneration Certification Scheme has just been launched) will be beneficial?** *Tick one box only*

Yes	☐
No	☐
Don't know	☐

10. **What was/is likely to be the waiting time before the installation can take place?** *Tick one box only*

Less than 1 month	☐
1-3 months	☐
4-6 months	☐
6+ months	☐

Now go to Q14

11. **Have you ever thought about installing a micro-renewable technology?** *Tick one box only*

Yes	☐
No	☐

If 'No' go to Q15, if 'Yes' proceed to Q12

12. What were your main reasons for deciding not to go ahead with installing some type of micro-renewable technology? *Tick as many as apply*

- Up-front cost of the technology ☐
- Additional costs (e.g. scaffolding etc) ☐
- Length of pay-back time ☐
- Lack of information about the technologies available ☐
- Difficulty finding an installer ☐
- Technical difficulties (e.g. metering, lack of roof space) ☐
- Waiting times for installation ☐
- Difficulty getting planning permission ☐
- Other (please provide details below) ☐

13. Which was the BIGGEST reason for deciding not to go ahead with an installation? *Tick one box only*

- Up-front cost of the technology ☐
- Additional costs (e.g. scaffolding etc) ☐
- Length of pay-back time ☐
- Lack of information about the technologies available ☐
- Difficulty finding an installer ☐
- Technical difficulties (e.g. metering, lack of roof space) ☐
- Waiting times for installation ☐
- Difficulty getting planning permission ☐
- Other (please provide details below) ☐

14. If you have installed or considered installing any micro-renewable technology, what were your main reasons? *Tick as many as apply*

- Long-term money saving ☐
- Worries about climate change ☐
- Other (please provide details below) ☐

15. Do you think that, at present, the cost of installing micro-renewable technologies is too high in comparison to the money-saving that you would gain? *Tick one box only*

- Yes, I agree ☐
- I agree, but only for some technologies ☐
- No, I disagree ☐
- Not sure ☐

16. Have you heard about the 'low carbon buildings' grants which are available to householders who want to install micro-renewable technologies? *Tick one box only*

- Yes ☐
- No ☐

17. If you were to invest in micro-renewable technology, what is the longest time-scale over which would you want to see your money back? *Tick one box only*

Within a year	☒
1 – 5 years	☐
6 – 10 years	☐
10 – 15 years	☐
25 – 20 years	☐
20+ years	☐

18. Do you think planning permission would be needed to install the following technology? *Tick one answer for each technology*

	Yes	No	Not sure
Solar panels (water heating or photovoltaic)	☐	☐	☐
Heat pump (ground, air or water)	☐	☐	☐
Biomass boiler	☐	☐	☐
Micro wind turbine	☐	☐	☐
Micro hydro-power	☐	☐	☐

19. How difficult or easy do you think it would be to get planning permission (if needed) if you wanted to install a micro-renewable technology? *Tick one box only*

Very difficult	☐
Difficult	☐
Not difficult	☐
Easy	☐

20. What do you think would be the biggest obstacles to getting planning permission for micro-renewable technologies (if needed)? *Tick as many as apply*

Location of dwelling (e.g. in Conservation Area)	☐
Neighbour objections	☐
Unsupportive planning policies	☐
Unsupportive planning officers	☐
Unsupportive local councillors/planning committee members	☐
Other (please provide details below)	☐

21. The government is currently proposing changes to planning law, so that many micro-renewable technologies will not require planning permission. Which of the following options best describes your opinion of this proposal? *Tick one box only*

Very positive	☐
Positive	☐
Neutral	☐
Negative	☐
Not sure	☐

Please provide a brief reason for your answer:

22. **The government is also introducing changes so that developers will be required to install micro-renewable technologies on all new housing developments, capable of generating a certain proportion (generally at least 10%) of the predicted energy requirements of that development. Which of the following options best describes your opinion of this proposal?**
Tick one box only

Very positive	☐
Positive	☐
Neutral	☐
Negative	☐
Not sure	☐

Please provide a brief reason for your answer:

Thank you very much for taking the time
to complete this questionnaire

In addition to the above questions, I would be very grateful if you could answer the questions below about yourself. These details will of course be kept confidential:

Age group

Under 18	☐
18-25	☐
26-35	☐
36-45	☐
46-55	☐
56-65	☐
65+	☐

Gender

Male	☐
Female	☐

Are you

The homeowner	☐
Tenant	☐
Other (please provide details below)	☐

DOMESTIC MICRO-SCALE RENEWABLE ENERGY QUESTIONNAIRE

1. Which of the following types of work are you/your company regularly involved in?
Tick as many as apply

Domestic extensions & alterations	☐
Residential conversions	☐
One-off new houses	☐
Small housing groups	☐
Large housing development	☐
Other (please provide details below)	☐

2. How would you best describe your knowledge of these micro-renewable technologies?
Tick one box for each of the technologies

	Very good	Good	Basic	Poor	Very poor	Haven't heard of
Solar water heating	☐	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐	☐
Micro hydro	☐	☐	☐	☐	☐	☐
Micro CHP (combined heat and power)	☐	☐	☐	☐	☐	☐

3. Have you/your company been involved in residential developments where micro-renewable technologies (e.g. solar panels, wind turbines, ground source heat pumps etc) have been incorporated? *Tick one box only*

Yes	☐
No	☐

If 'No' please go to Q8, if 'Yes' please proceed to Q4

4. Which of the following small-scale renewable energy technologies have been incorporated into residential developments you/your company have worked on? *Tick as many as apply*

Solar water heating	☐
Solar photovoltaic	☐
Heat pumps (ground, air or water source)	☐
Biomass boilers	☐
Micro wind turbines	☐
Micro hydro-power	☐
Micro CHP (combined heat and power)	☐
Other (please give details below)	☐

5. **What was the main reason for incorporating the renewable energy technology into the development?** *Tick one box only*

Long-term cost savings	☐
Worries about climate change	☐
Required to do so by Local Planning Authority	☐
Other (please provide details below)	☐

6. **How easy was it to find an installer to install the micro-renewable technology?** *Tick one box only*

Very easy	☐
Easy	☐
Neither easy nor difficult	☐
Difficult	☐
Very difficult	☐
Don't know	☐

7. **Do you think introducing a standard accreditation system for renewable energy installers and products will be beneficial?** *Tick one box only*

Yes	☐
No	☐
Don't know	☐

8. **Do you think that customers would prefer to buy a house which has renewable energy technologies incorporated, rather than one without these technologies?** *Tick one box only*

Yes, even if it costs more	☐
Yes, if the cost is the same	☐
No	☐
Not sure	☐

9. **The government is introducing changes to the planning system so that developers will be required to install micro-renewable technologies on all new housing developments, capable of generating a certain proportion (generally at least 10%) of the predicted energy requirements of that development. Which of the following options best describes your opinion of this proposal?** *Tick one box only*

Very positive	☐
Positive	☐
Neutral	☐
Negative	☐
Not sure	☐
Not aware of the proposed changes	☐

Please provide a brief reason for your answer:

10. If you were required to include renewable energy technology capable of generating 10% of predicted future energy requirements, by how much do you think this would increase the build cost of the average development? *Tick one box only*

No increase ☐
1-10% ☐
11-25% ☐
26-50% ☐
50%+ ☐
Not sure ☐

11. Would meeting a 10% requirement increase the difficulty of constructing a housing development? *Tick one box only*

Yes ☐
No ☐

12. Do/would you have the expertise in-house to decide which technologies to use to achieve a 10% requirement? *Tick one box only*

Yes ☐
No ☐

13. Are you aware of any guidance available to developers to assist with that kind of decision? *Tick one box only*

Yes ☐
No ☐

If 'Yes' please provide details:

14. Do you think additional guidance is needed? *Tick one box only*

Yes ☐
No ☐

15. Would you usually seek advice from the Local Planning Authority during the course of a development? *Tick one box only*

Yes ☐
No ☐

If 'No' go to Q18, if 'Yes' proceed to Q16

16. At what stage would you first seek advice from the Local Planning Authority? *Tick one box only*

Before purchasing land ☐
After purchasing land, but before submitting a planning application ☐
Once a planning application has been submitted ☐
Other (please provide details below) ☐

17. Which of the following options best describes your opinion of the advice you normally receive from the Planning Authority? *Tick one box only*

- Highly satisfactory ☐
- Satisfactory ☐
- Unsatisfactory ☐
- Highly unsatisfactory ☐
- Varies, depending on the Authority ☐

18. What are the biggest problems encountered in dealing with the Planning Authority during the course of a development? *Tick as many as apply*

- No problems normally encountered ☐
- Inconsistency in the advice provided ☐
- Poor quality of advice given ☐
- Advice provided too late ☐
- Unsupportive planning policies ☐
- Unsupportive planning officers ☐
- Unsupportive local councillors/planning committee members ☐
- Other (please provide details below) ☐

19. Do you believe that human-induced climate change is happening? *Tick one box only*

- Yes ☐
- No ☐
- Not sure ☐

Thank you very much for taking the time
to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐

If you DO NOT wish to be contacted further in the future to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Company name:
Email address:
Telephone number:

Additional comments:

DOMESTIC MICRO-SCALE RENEWABLE ENERGY QUESTIONNAIRE

1. Which of the following types of work do you/your practice regularly provide advice on? *Tick as many as apply*

Domestic extensions & alterations	☐
Residential conversions	☐
One-off new houses	☐
Small housing groups	☐
Large housing development	☐
Other (please provide details below)	☐

2. Which of the following categories do the majority of your clients fit into? *Tick one box only*

Householders	☐
Developers	☐
Mixture of both	☐
Other (please provide details below)	☐

3. How would you best describe your knowledge of these micro-renewable technologies? *Tick one box for each of the technologies*

	Very good	Good	Basic	Poor	Very poor	Haven't heard of
Solar water heating	☐	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐	☐
Micro hydro	☐	☐	☐	☐	☐	☐
Micro CHP (combined heat and power)	☐	☐	☐	☐	☐	☐

4. Approximately what proportion of clients initially express an interest in incorporating micro-renewable technologies? *Please tick one box for each type of work in which you/your practice is regularly involved*

Type of work	**0-25%**	**26-50%**	**51-75%**	**76-100%**	**n/a**
Domestic extensions & alterations	☐	☐	☐	☐	☐
Residential conversions	☐	☐	☐	☐	☐
One-off new houses	☐	☐	☐	☐	☐
Small housing groups	☐	☐	☐	☐	☐
Large housing development	☒	☐	☐	☐	☐

5. **Approximately what proportion of those clients initially interested in a micro-renewable technology actually end up installing it?**
Please tick one box for each type of work in which you/your practice is regularly involved

Type of work	0-25%	26-50%	51-75%	76-100%	n/a
Domestic extensions & alterations	☐	☐	☐	☐	☐
Residential conversions	☐	☐	☐	☐	☐
One-off new houses	☐	☐	☐	☐	☐
Small housing groups	☐	☐	☐	☐	☐
Large housing development	☐	☐	☐	☐	☐

6. **What do you think is your clients' main motivation for installing micro-renewable technologies?** *Tick one box only*

Long-term cost savings ☐
Worries about climate change ☐
Not sure ☐
Other (please provide details below) ☐

7. **Of the clients who express an initial interest in incorporating micro-renewable technologies at the design stage, but then do not go through with an installation, what are the main reasons for not going ahead with an installation?** *Tick as many as apply*

Up-front cost of the technology ☐
Additional costs (e.g. scaffolding etc) ☐
Length of pay-back time ☐
Lack of information about the technologies available ☐
Difficulty finding an installer ☐
Technical difficulties (e.g. metering, lack of roof space) ☐
Waiting times for installation ☐
Difficulty getting planning permission ☐
Other (please provide details below) ☐

8. **Which is the BIGGEST reason for customers deciding not to go ahead with an installation?**
Tick one box only

Up-front cost of the technology ☐
Additional costs (e.g. scaffolding etc) ☐
Length of pay-back time ☐
Lack of information about the technologies available ☐
Difficulty finding an installer ☐
Technical difficulties (e.g. metering, lack of roof space) ☐
Waiting times for installation ☐
Difficulty getting planning permission ☐
Other (please provide details below) ☐

9. Do you think that, at present, the cost of installing micro-renewables is too high in comparison to the money-savings that are likely to be made? *Tick one box only*

Yes, I agree ☐
I agree, but only for some technologies ☐
No, I disagree ☐
Not sure ☐

10. Are you aware of the 'low carbon buildings programme' grants which are available to householders who want to install renewable energy technologies? *Tick one box only*

Yes, and we provide clients with details ☐
Yes, but we don't provide this type of advice to clients ☐
No ☐

11. How easy is it to find an installer to carry out an installation if clients decide to go ahead with a micro-renewable installation? *Tick one box only*

Very easy ☐
Easy ☐
Neither easy nor difficult ☐
Difficult ☐
Very difficult ☐
Don't know ☐

12. Do you think introducing a standard accreditation system for renewable energy installers and products will be beneficial? *Tick one box only*

Yes ☐
No ☐
Don't know ☐

13. How consistent is the advice you receive about whether planning permission is required for micro-renewable installations, from case to case and between different Local Planning Authorities? *Tick one box only*

Consistent ☐
Fairly consistent ☐
Inconsistent ☐
N/A or don't know ☐

14. In general, how easy do you think it is to get planning permission for each of the following technologies? *Please tick one box for each technology*

	Very difficult	Difficult	Not difficult	Easy	n/a or don't know
Solar water heating	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐
Micro hydro-power	☐	☐	☐	☐	☐
Micro CHP	☐	☐	☐	☐	☐

15. **What do you think are the biggest obstacles to getting planning permission for micro-renewable technologies (if needed)?** *Tick as many as apply*

Location of dwelling (e.g. in Conservation Area)	☐
Neighbour objections	☐
Unsupportive planning policies	☐
Unsupportive planning officers	☐
Unsupportive local councillors/planning committee members	☐
Other (please provide details below)	☐

16. **Would you usually seek advice from the Local Planning Authority during the course of a development?** *Tick one box only*

Yes	☐
No	☐

If 'No' please go to Q19, if 'Yes' please proceed to Q17

17. **At what stage would you normally first seek advice from the Local Planning Authority?** *Tick one box only*

Prior to submitting a planning application	☐
After a planning application has been submitted	☐
Other (please provide details below)	☐

18. **Which of the following options best describes your opinion of the advice you normally receive from the Planning Authority?** *Tick one box only*

Highly satisfactory	☐
Satisfactory	☐
Unsatisfactory	☐
Highly unsatisfactory	☐
Varies, depending on the Authority	☐

19. **What are the biggest problems encountered in dealing with the Planning Authority during the course of a development?** *Tick as many as apply*

No problems normally encountered	☐
Inconsistency in the advice provided	☐
Poor quality of advice given	☐
Advice provided too late in the process	☐
Unsupportive planning policies	☐
Unsupportive planning officers	☐
Unsupportive local councillors/planning committee members	☐
Other (please provide details below)	☐

20. Which of the following options best describes your opinion of the proposed changes to Householder Permitted Development rights, so that many micro-renewable installations will not require planning permission? *Tick one box only*

Very positive ☐
Positive ☐
Neutral ☐
Negative ☐
Not sure ☐
Not aware of the proposed changes ☐

Please provide a brief reason for your answer:

21. The government is introducing changes to the planning system so that developers will be required to install micro-renewable technologies on all new housing developments, capable of generating a certain proportion (generally at least 10%) of the predicted energy requirements of that development. Which of the following options best describes your opinion of this proposal? *Tick one box only*

Very positive ☐
Positive ☐
Neutral ☐
Negative ☐
Not sure ☐
Not aware of the proposed changes ☐

Please provide a brief reason for your answer:

22. Do you believe that human-induced climate change is happening? *Tick one box only*

Yes ☐
No ☐
Not sure ☐

Thank you very much for taking the time to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐
If you DO NOT wish to be contacted further to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Company name:
Email address:
Telephone number:

Additional comments:

DOMESTIC MICRO-SCALE RENEWABLE ENERGY QUESTIONNAIRE

1. Which of the following types of work are you/your practice regularly involved in?
Tick as many as apply

Domestic extensions & alterations	☐
Residential conversions	☐
One-off new houses	☐
Small housing groups	☐
Large housing development	☐
Other (please provide details below)	☐

2. Which of the following categories do the majority of your clients fit into? *Tick one box only*

Householders	☐
Developers	☐
Mixture of both	☐
Other (please provide details below)	☐

3. How would you best describe your knowledge of these micro-renewable technologies?
Tick one box for each of the technologies

Technology	Very good	Good	Basic	Poor	Very poor	Haven't heard of
Solar water heating	☐	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐	☐
Micro hydro	☐	☐	☐	☐	☐	☐
Micro CHP (combined heat and power)	☐	☐	☐	☐	☐	☐

4. Approximately what proportion of clients initially express an interest at the design stage in incorporating micro-renewable technologies *Please tick one box for each type of work in which you/your practice is regularly involved*

Type of work	**0-25%**	**26-50%**	**51-75**	**76-100%**	**n/a**
Domestic extensions & alterations	☐	☐	☐	☐	☐
Residential conversions	☐	☐	☐	☐	☐
One-off new houses	☐	☐	☐	☐	☐
Small housing groups	☐	☐	☐	☐	☐
Large housing development	☐	☐	☐	☐	☐

5. **Approximately what proportion of those clients initially interested in micro-renewable technologies end up going ahead with an installation?**
Please tick one box for each type of work in which you/your practice is regularly involved

Type of work	0-25%	26-50%	51-75	76-100%	n/a
Domestic extensions & alterations	☐	☐	☐	☐	☐
Residential conversions	☐	☐	☐	☐	☐
One-off new houses	☐	☐	☐	☐	☐
Small housing groups	☐	☐	☐	☐	☐
Large housing development	☐	☐	☐	☐	☐

6. **Please rank these technologies according to their popularity with clients**
5= very popular, 4=popular, 3=neither popular nor unpopular, 2= unpopular, 1=very unpopular

Solar water heating
Solar photovoltaic
Heat pumps (ground, air or water source)
Biomass boilers
Micro wind turbines
Micro hydro-power
Micro CHP (combined heat and power)

7. **What do you think is your clients' main motivation for installing micro-renewable technologies?** *Tick one box only*

Long-term cost savings ☐
Worries about climate change ☐
Not sure ☐
Other (please provide details below) ☐

8. **What do you think are the main reasons for customers deciding not to go ahead with an installation?** *Tick as many as apply*

Up-front cost of the technology ☐
Additional costs (e.g. scaffolding etc) ☐
Length of pay-back time ☐
Lack of information about the technologies available ☐
Difficulty finding an installer ☐
Technical difficulties (e.g. metering, lack of roof space) ☐
Waiting times for installation ☐
Difficulty getting planning permission ☐
Other (please provide details below) ☐

9. Which is the BIGGEST reason for customers deciding not to go ahead with an installation? *Tick one box only*

- Up-front cost of the technology ☐
- Additional costs (e.g. scaffolding etc) ☐
- Length of pay-back time ☐
- Lack of information about the technologies available ☐
- Difficulty finding an installer ☐
- Technical difficulties (e.g. metering, lack of roof space) ☐
- Waiting times for installation ☐
- Difficulty getting planning permission ☐
- Other (please provide details below) ☐

10. Do you think that the cost of installing micro-renewable technologies is too high in comparison to the money-savings that are likely to be made? *Tick one box only*

- Yes, I agree ☐
- I agree, but only for some technologies ☐
- No, I disagree ☐
- Not sure ☐

11. Are you aware of the 'low carbon buildings programme' grants which are available to householders who want to install renewable energy technologies? *Tick one box only*

- Yes, and we provide clients with details ☐
- Yes, but we don't provide this type of advice to clients ☐
- No ☐

12. How easy is it to find an installer to carry out the installation if clients decide to go ahead with a micro-renewable installation? *Tick one box only*

- Very easy ☐
- Easy ☐
- Neither easy nor difficult ☐
- Difficult ☐
- Very difficult ☐
- Don't know ☐

13. Do you think introducing a standard accreditation system for renewable energy installers and products will be beneficial? *Tick one box only*

- Yes ☐
- No ☐
- Don't know ☐

14. **What proportion of the micro-renewable technologies which you/your practice design into schemes require planning permission?** *Tick one box only*

None	☐
1-25%	☐
26-50%	☐
51-75%	☐
76-100%	☐

15. **How consistent is the advice you receive about whether planning permission is required for a particular micro-renewable installation, from case to case and between different Local Planning Authorities?** *Tick one box only*

Consistent	☐
Fairly consistent	☐
Inconsistent	☐
N/A or don't know	☐

16. **In general, how easy do you think it is to get planning permission for each of the following technologies?** *Please tick one box for each technology*

	Very difficult	Difficult	Not difficult	Easy	n/a or don't know
Solar water heating	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐
Micro hydro-power	☐	☐	☐	☐	☐
Micro CHP	☐	☐	☐	☐	☐

17. **What do you think are the biggest obstacles to getting planning permission for micro-renewable technologies (if needed)?** *Tick as many as apply*

Location of dwelling (e.g. in Conservation Area)	☐
Neighbour objections	☐
Unsupportive planning policies	☐
Unsupportive planning officers	☐
Unsupportive local councillors/planning committee members	☐
Other (please provide details below)	☐

18. **Would you usually seek advice from the Local Planning Authority during the design process?** *Tick one box only*

Yes	☐
No	☐

If 'No' please go to Q21, if 'Yes' please proceed to Q19

19. At what stage would you normally first seek advice from the Local Planning Authority? *Tick one box only*

Prior to submitting a planning application	☐
After a planning application has been submitted	☐
Other (please provide details below)	☐

20. Which of the following options best describes your opinion of the advice you normally receive from the Planning Authority? *Tick one box only*

Highly satisfactory	☐
Satisfactory	☐
Unsatisfactory	☐
Highly unsatisfactory	☐
Varies, depending on the Authority	☐

21. What are the biggest problems encountered in dealing with the Planning Authority? *Tick as many as apply*

No problems normally encountered	☐
Inconsistency in the advice provided	☐
Poor quality of advice given	☐
Advice provided too late	☐
Unsupportive planning policies	☐
Unsupportive planning officers	☐
Unsupportive local councillors/planning committee members	☐
Other (please provide details below)	☐

22. Which of the following options best describes your opinion of the proposed changes to Householder Permitted Development rights, so that many micro-renewable installations will not require planning permission? *Tick one box only*

Very positive	☐
Positive	☐
Neutral	☐
Negative	☐
Not sure	☐
Not aware of the proposed changes	☐

Please provide a brief reason for your answer:

23. The government is introducing changes to the planning system so that developers will be required to install micro-renewable technologies on all new housing developments, capable of generating a certain proportion (generally at least 10%) of the predicted energy requirements of that development. Which of the following options best describes your opinion of this proposal? *Tick one box only*

Very positive ☐
Positive ☐
Neutral ☐
Negative ☐
Not sure ☐
Not aware of the proposed changes ☐

Please provide a brief reason for your answer:

24. Do you believe that human-induced climate change is happening? *Tick one box only*

Yes ☐
No ☐
Not sure ☐

Thank you very much for taking the time
to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐

If you DO NOT wish to be contacted further in the future to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Practice name:
Email address:
Telephone number:

Additional comments:

DOMESTIC MICRO-SCALE
RENEWABLE ENERGY QUESTIONNAIRE

1. **On average, approximately how many enquiries does your department receive relating to installing small-scale, domestic, renewable energy technologies, per week?** *Tick one box only*

0-10	☐
11-20	☐
21-30	☐
31+	☐

2. **Which of the following groups is the main source of these enquiries?**
Tick the one box which you think represents the main source

Householders	☐
Developers	☐
Agents/architects	☐
Others (please give details below)	☐

3. **For which of the following types of work/development do you regularly receive enquiries about micro-renewable installations?** *Tick as many as apply*

Renewable energy installations on their own	☐
Domestic extensions and alterations	☐
Residential conversions	☐
One-off new houses	☐
Small housing groups	☐
Large housing developments	☐
Other (please give details below)	☐

4. **Which of the following types of domestic micro-renewable technologies do you regularly receive enquiries about?** *Tick as many as apply*

Solar water heating	☐
Solar photovoltaic	☐
Heat pumps (ground, air or water source)	☐
Biomass boilers	☐
Micro wind turbines	☐
Micro hydro-power	☐
Micro CHP (combined heat and power)	☐
Other (please give details below)	☐

5. **How would you best describe your knowledge of these micro-renewable technologies?**
Tick one box for each of the technologies

	Very good	Good	Basic	Poor	Very poor	Haven't heard of
Solar water heating	☐	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐	☐
Micro hydro	☐	☐	☐	☐	☐	☐
Micro CHP (combined heat and power)	☐	☐	☐	☐	☐	☐

6. **Does your Local Authority have an in-house expert who can provide advice, both internally to the planning department, and externally to customers, about micro-renewable technologies?** *Tick one box only*

Yes ☐
No ☐

7. **Have you or any of the development control team attended training courses/conferences on planning and renewable energy?** *Tick one box only*

Yes ☐
No ☐

8. **Do you think that sufficient training is provided for Development Control officers on planning and renewable energy?** *Tick one box only*

Yes ☐
No ☐

9. **How consistent is the advice provided by your Development Control department on whether planning permission is needed for micro-renewable installations?** *Tick one box only*

Consistent ☐
Fairly consistent ☐
Inconsistent ☐

10. **Which of the following options best describes your opinion of the proposed changes to Householder Permitted Development rights, so that many micro-renewable installations will not require planning permission?** *Tick one box only*

Very positive ☐
Positive ☐
Neutral ☐
Negative ☐
Not sure ☐
Not aware of the proposed changes ☐

Please provide a brief reason for your answer:

11. Does your adopted Local Plan/Unitary Development Plan contain a 'Merton-style' policy requiring on-site provision of micro-renewable technologies for new housing developments, capable of generating a certain proportion of the predicted future energy requirements of that development? *Tick one box only*

Yes ☐
No ☐

12. Will your Local Development Framework (LDF) include such a policy? *Tick one box only*

Yes ☐
No ☐
Not sure ☐

13. Which of the following options best describes your opinion of the impact that these 'Merton style' policies will have? *Tick one box only*

Very positive ☐
Positive ☐
Neutral ☐
Negative ☐
Not sure ☐

Please provide a brief reason for your answer:

14. How do/would you feel about negotiating with developers for the provision of on-site micro-renewable technologies for new residential developments? *Tick one box only*

Comfortable ☐
Neither comfortable or uncomfortable ☐
Uncomfortable ☐
Don't know ☐

15. Is there/do you think there would be, much objection to this type of 'Merton-style' policy? *Tick one box only*

Yes ☐
No ☐

If 'No' please go to Q18, if 'Yes' please proceed to Q16

16. Which of the following groups object/do you think will object to this type of policy? *Tick as many as apply*

Householders ☐
Developers ☐
Landowners ☐
Other (please provide details below) ☐

17. What are/do you think will be the main reasons for opposition to this type of policy?
Tick as many as apply

Unwillingness of developers to comply	☐
Negative effect on viability of development sites	☐
Concerns about the impacts on landscape or character of the area	☐
Concerns about impacts on neighbours	☐
Lack of expertise within the Planning department/Local Authority	☐
The requirements lie outside the remit of the Planning system	☐
Other (please provide details below)	☐

18. Please give each of the following factors a score to reflect their importance in determining a planning application for a housing scheme *(5= Very important; 1= Unimportant)*

Provision of affordable housing
Design/streetscene impact
Impact on wider surrounding landscape
Impact on neighbours
Impact on Highway Safety
Provision of on-site renewable energy technologies
Provision of public open space
Provision of s106 contributions
Density
Other (please provide details below) ☐

19. In terms of the overall priorities of the Members of your Council, how important is the pursuit of environmental objectives, such as renewable energy provision? *Tick one box only*

Most important	☐
Important	☐
Neither important nor unimportant	☐
Unimportant	☐

20. Do you believe that human-induced climate change is happening? *Tick one box only*

Yes	☐
No	☐
Not sure	☐

Thank you very much for taking the time
to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐
If you DO NOT wish to be contacted further to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Position:
LPA:
Email address:

DOMESTIC MICRO-SCALE
RENEWABLE ENERGY QUESTIONNAIRE

1. **Does your adopted Local Plan/Unitary Development Plan contain a 'Merton-style' policy requiring on-site provision of micro-renewable technologies for new housing developments, capable of generating a certain proportion of the predicted future energy requirements of that development?** *Tick one box only*

Yes ☐
No ☐

2. **Will your Local Development Framework (LDF) include such a policy?** *Tick one box only*

Yes ☐
No ☐
Not sure ☐

If you answered 'yes' to either Q1 or Q2, please continue to Q3, otherwise go to Q8

3. **What size of residential development does/will this policy apply to?** *Tick one box only*

All residential development, regardless of size ☐
More than 3 dwellings ☐
More than 10 dwellings (major development) ☐
More than 25 dwellings ☐
More than 50 dwellings ☐
Other (please provide details below) ☐

4. **What percentage of on-site renewables does/will the policy require?** *Tick one box only*

10% of predicted energy requirements ☐
More than 10% of predicted energy requirements ☐
Other (please provide details below) ☐

5. **Has much opposition to the existing/proposed policy been received?** *Tick one box only*

Yes ☐
No ☐

If 'No' please go to Q7, if 'Yes' please proceed to Q6

6. **Which of the following groups have opposed the existing/proposed policy?** *Tick as many as apply*

Householders ☐
Developers ☐
Landowners ☐
Government Office ☐
Other (please provide details below) ☐

7. **What have the main reason(s) for opposition been?** *Tick one box only*

Unwillingness of developers to comply	☐
Negative effect on viability of development sites	☐
Concerns about the impacts on landscape or character of the area	☐
Concerns about impacts on neighbours	☐
Lack of expertise within the Planning department/Local Authority	☐
The requirements lie outside the remit of the Planning system	☐
Other (please provide details below)	☐

8. **Does your LPA have existing planning guidance on micro-renewable technologies?** *Tick one box only*

Yes, in the form of adopted Supplementary Planning Guidance	☐
Yes, but not as adopted Supplementary Planning Guidance	☐
No	☐

9. **Does your LPA intend to produce a Supplementary Planning Document on micro-renewable technologies, to form part of the LDF?** *Tick one box only*

Yes	☐
No	☐

10. **In terms of the overall priorities of the Members of your Council, how important is the pursuit of environmental objectives, such as renewable energy provision?** *Tick one box only*

Most important	☐
Important	☐
Neither important nor unimportant	☐
Unimportant	☐

11. **Do you believe that human-induced climate change is happening?** *Tick one box only*

Yes	☐
No	☐
Not sure	☐

Thank you very much for taking the time
to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐

If you DO NOT wish to be contacted further to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Position:
LPA:
Email address:

DOMESTIC MICRO-SCALE
RENEWABLE ENERGY QUESTIONNAIRE

1. **How long have you served on the Planning/Development Control Committee?**
Tick one box only

Less than 1 year	☐
1-3 years	☐
4-6 years	☐
7+ years	☐

2. **As a councillor and member of the Planning/Development Control Committee, are you involved in providing pre-application advice to householders or developers wishing to submit a planning application?**

Yes	☐
No	☐

3. **How familiar are you with Local and National planning policy?**
Tick one box for each type of policy

	Local planning policy	National planning policy
Very familiar	☐	☐
Familiar	☐	☐
Neither familiar or unfamiliar	☐	☐
Unfamiliar	☐	☐

4. **Are you or the Planning/Development Control Committee involved in policy formulation?**
Tick one box only

Yes	☐
No	☐

5. **As a member of the Planning/Development Control Committee, are you given training on planning issues?** *Tick one box only*

Yes	☐
No	☐

If 'No' go to Q8, if 'Yes' proceed to Q6

6. **Have you received or are you due to receive, any training on planning and renewable energy?** *Tick one box only*

Yes	☐
No	☐
Not sure	☐

7. **How frequently is planning training provided for committee members?**
Tick one box only

One-off	☐
More than once per year	☐
Yearly	☐
Other (please provide details below)	☐

8. **Do you think more or better training should be provided?** *Tick one box for each issue*

	General planning issues	Renewable energy
Yes	☐	☐
No	☐	☐

9. **In arriving at a decision on a specific case, do you think it is important for councillors to have a good understanding of the issues, or are you happy to rely on the professional advice of the planning officers?** *Tick one box only*

Important for councillors to have their own knowledge	☐
Happy to rely on planning officers' advice	☐
Mixture of both	☐

10. **How would you best describe your knowledge of these micro-renewable technologies?**
Tick one box for each of the technologies

	Very good	Good	Basic	Poor	Very poor	Haven't heard of
Solar water heating	☐	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐	☐
Micro hydro	☐	☐	☐	☐	☐	☐
Micro CHP (combined heat and power)	☐	☐	☐	☐	☐	☐

11. **Which of the following options best describes your Council's approach to planning proposals for domestic renewable energy schemes?** *Tick one box only*

We support them wherever possible	☐
We only support them if all other considerations have been met	☐
Other (please provide details below)	☐

12. **In terms of the overall priorities of your Council, how important would you rank the pursuit of environmental objectives, such as renewable energy provision?** *Tick one box only*

Most important	☐
Important	☐
Neither important or unimportant	☐
Unimportant	☐

13. **Please give each of the following factors a score to reflect their importance in determining a planning application for a housing scheme** *(5= Very important; 1= Unimportant)*

Provision of affordable housing	
Design/streetscene impact	
Impact on wider surrounding landscape	
Impact on neighbours	
Impact on Highway Safety	
Provision of on-site renewable energy technologies	
Provision of public open space	
Provision of s106 contributions	
Density	
Other (please provide details below)	☐

14. **Which of the following options best describes your opinion of the proposed changes to Householder Permitted Development Rights, so that many micro-renewable installations will not require planning permission?** *Tick one box only*

Very positive	☐
Positive	☐
Neutral	☐
Negative	☐
Not sure	☐
Not aware of the proposed changes	☐

15. **The government is introducing changes to the planning system so that developers will be required to install micro-renewable technologies on all new housing developments, capable of generating a certain proportion (generally at least 10%) of the predicted energy requirements of that development. Which of the following options best describes your opinion of this proposal?** *Tick one box only*

Very positive	☐
Positive	☐
Neutral	☐
Negative	☐
Not sure	☐
Not aware of the proposed changes	☐

16. **Do you envisage that adopting this type of policy would be problematic?**

Yes	☐
No	☐

If 'No' go to Q18, if 'Yes' proceed to Q17

17. What do you think the main difficulties with adopting this type of policy are likely to be?
Tick as many as apply

Unwillingness of developers to comply	☐
Negative effect on viability of development sites	☐
Concerns about the impacts on landscape or character of the area	☐
Concerns about impacts on neighbours	☐
Lack of expertise within the Planning department/Local Authority	☐
The requirements lie outside the remit of the Planning system	☐
Other (please provide details below)	☐

18. Do you believe that human-induced climate change is happening? *Tick one box only*

Yes	☐
No	☐
Not sure	☐

Thank you very much for taking the time
to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐
If you DO NOT wish to be contacted further to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Local Authority:
Email address:
Telephone number:

Additional comments:

DOMESTIC MICRO-SCALE
RENEWABLE ENERGY QUESTIONNAIRE

1. **Which of the following micro-renewable technologies do your company install?**
Tick as many as apply

Solar water heating ☐
Solar photovoltaic ☐
Heat pumps (ground, air or water source) ☐
Biomass boilers ☐
Micro wind turbines ☐
Micro hydro-power ☐
Micro CHP (combined heat and power) ☐
Other (please provide details below) ☐

2. **Which of the following categories do the majority of your customers fall into?**
Tick one box only

Householders ☐
Developers ☐
Mixture of both ☐
Other (please provide details below) ☐

3. **On average, how many enquiries do you receive from customers interested in installing micro-renewable technologies in a week?** *Tick one box only*

0-5 ☐
6-10 ☐
11-15 ☐
16-20 ☐
21-25 ☐
25+ ☐

4. **Approximately what proportion of the enquiries your company receives end up with an installation taking place?** *Tick one box only*

0-25% ☐
26-50% ☐
51-75% ☐
76-100% ☐

5. **What do you think is your customers' main motivation for installing micro-renewable technologies?** *Tick one box only*

Long-term cost savings ☐
Worries about climate change ☐
Not sure ☐
Other (please provide details below) ☐

6. **What do you think are the main reasons for customers deciding not to go ahead with an installation?** *Tick as many as apply*

Up-front cost of the technology	☐
Additional costs (e.g. scaffolding etc)	☐
Length of pay-back time	☐
Lack of information about the technologies available	☐
Technical difficulties (e.g. metering, lack of roof space)	☐
Waiting times for installation	☐
Difficulty getting planning permission	☐
Other (please provide details below)	☐

7. **Which is the BIGGEST reason for customers deciding not to go ahead with an installation?** *Tick one box only*

Up-front cost of the technology	☐
Additional costs (e.g. scaffolding etc)	☐
Length of pay-back time	☐
Lack of information about the technologies available	☐
Technical difficulties (e.g. metering, lack of roof space)	☐
Waiting times for installation	☐
Difficulty getting planning permission	☐
Other (please provide details below)	☐

8. **What is the average waiting time for an installation?** *Tick one box only*

Less than 1 month	☐
1-3 months	☐
4-6 months	☐
6+ months	☐

9. **Do you think that the cost of installing micro-renewable technologies is too high in comparison to the money-savings that are likely to be made?** *Tick one box only*

Yes, I agree	☐
I agree, but only for some technologies	☐
No, I disagree	☐
Not sure	☐

10. **Are you aware of the 'low carbon buildings programme' grants which are available to householders who want to install micro-renewable technologies?** *Tick one box only*

Yes, and we provide clients with details	☐
Yes, but we don't provide this type of advice to clients	☐
No	☐

11. **Does your company advertise?** *Tick one box only*

Yes	☐
No	☐

If 'No' go to Q13, if 'Yes' proceed to Q12

12. What form(s) of advertising does your company use? *Tick as many as apply*

Yellow pages/phone book ☐
Local newspapers/newsletters ☐
Magazines/journals ☐
Television ☐
Radio ☐
Internet ☐
Other (please provide details below) ☐

Now go to Q14

13. Why does your company choose not to advertise? *Tick as many as apply*

Too expensive ☐
Not enough interest generated by adverts ☐
No need to advertise, plenty of business generated without ☐
Other (please provide details below) ☐

14. Are you/your company a member or intending to become a member of the UK Microgeneration Certification Scheme? *Tick one box only*

Yes ☐
No ☐

15. Do you think that this accreditation system for products and installers will be beneficial? *Tick one box only*

Yes ☐
No ☐

16. Approximately what proportion of the installations you carry out require planning permission? *Tick one box only*

None ☐
1-25% ☐
26-50% ☐
51-75% ☐
76-100% ☐

17. How consistent is the advice you receive about whether planning permission is required for micro-renewable installations, from case to case and between different Local Planning Authorities? *Tick one box only*

Consistent ☐
Fairly consistent ☐
Inconsistent ☐
N/A or don't know ☐

18. In general, how easy do you think it is to get planning permission for each of the following technologies? *Please tick one box for each technology*

	Very difficult	Difficult	Not difficult	Easy	n/a or don't know
Solar water heating	☐	☐	☐	☐	☐
Solar photovoltaic	☐	☐	☐	☐	☐
Heat pumps	☐	☐	☐	☐	☐
Biomass boilers	☐	☐	☐	☐	☐
Micro wind turbines	☐	☐	☐	☐	☐
Micro hydro-power	☐	☐	☐	☐	☐
Micro CHP	☐	☐	☐	☐	☐

19. What do you think are the biggest obstacles to getting planning permission for micro-renewable technologies (if needed)? *Tick as many as apply*

Location of dwelling (e.g. in Conservation Area) ☐
Neighbour objections ☐
Unsupportive planning policies ☐
Unsupportive planning officers ☐
Unsupportive local councillors/planning committee members ☐
Other (please provide details below) ☐

20. Would you usually seek advice from the Local Planning Authority prior to carrying out an installation? *Tick one box only*

Yes ☐
No ☐

If 'No' please go to Q20, if 'Yes' please proceed to Q19

21. Which of the following options best describes your opinion of the advice you normally receive from the Planning Authority? *Tick one box only*

Highly satisfactory ☐
Satisfactory ☐
Unsatisfactory ☐
Highly unsatisfactory ☐
Varies, depending on the Authority ☐

22. What are the biggest problems encountered in dealing with the Planning Authority during the course of an installation? *Tick as many as apply*

No problems normally encountered ☐
Inconsistency in the advice provided ☐
Poor quality of advice given ☐
Advice provided too late ☐
Unsupportive planning policies ☐
Unsupportive planning officers ☐
Unsupportive local councillors/planning committee members ☐
Other (please provide details below) ☐

23. Which of the following options best describes your opinion of the proposed changes to Householder Permitted Development rights, so that many micro-renewable installations will not require planning permission? *Tick one box only*

- Very positive ☐
- Positive ☐
- Neutral ☐
- Negative ☐
- Not sure ☐
- Not aware of the proposed changes ☐

Please provide a brief reason for your answer:

24. The government is introducing changes to the planning system so that developers will be required to install micro-renewable technologies on all new housing developments, capable of generating a certain proportion (generally at least 10%) of the predicted energy requirements of that development. Which of the following options best describes your opinion of this proposal? *Tick one box only*

- Very positive ☐
- Positive ☐
- Neutral ☐
- Negative ☐
- Not sure ☐
- Not aware of the proposed changes ☐

Please provide a brief reason for your answer:

25. Do you believe that human-induced climate change is happening? *Tick one box only*

- Yes ☐
- No ☐
- Not sure ☐

Thank you very much for taking the time to complete this questionnaire

If you would like to be provided with details of the research findings, please tick the box: ☐

If you DO NOT wish to be contacted further in the future to help with this research project, please tick the box: ☐

If you are happy to be contacted further to help with this research project, providing the information below would be very helpful. This will be kept strictly confidential.

Contact name:
Practice name:
Email address:
Telephone number:

Additional comments:

APPENDIX 5 – Summary of Research Findings

Summary of Research Findings	
1.	There is a high level of public awareness of climate change and an acceptance of the need to use more energy from renewable sources.
2.	Despite this, there is clear evidence of a 'value-action' gap as few householders have either installed MGTs or actively considered an installation.
3.	When asked directly, the biggest barriers identified across all the groups were up-front cost of the technology and length of pay-back time.
4.	Householders, planning consultants and architects/technicians all think the costs of micro-generation are too high in relation to the money savings.
5.	Installers think the costs of micro-generation are only too high for some technologies.
6.	Most householders are not fully informed of the costs of micro-generation, and in particular there is a lack of knowledge about the LCBP grants.
7.	Only a small proportion of planning consultants and architects/technicians are aware of the LCBP grant and provide this type of advice to their clients.
8.	The majority of householders would only invest in micro-generation if they would see their money back within 5 years. This is unlikely to be achieved by any of the MGTs at current costs.
9.	Solar water heating and micro wind turbines are the best-known MGTs amongst householders. These are amongst the most expensive, and have some of the longest pay-back times.
10.	Experiences of finding an installer were varied, with some finding it difficult, and some finding it easy.
11.	Most installers advertise, and the most popular forms of advertising are magazines or journals, the internet or the yellow pages/phone book.
12.	The majority of installers have become members of the UK Microgeneration Certification Scheme, but views of the scheme are mixed amongst the installers.
13.	Planning permission is not seen as a main barrier to micro-generation, but the majority of householders thought it would be difficult or very difficult to obtain planning permission for a micro-generation installation.
14.	Less than half of LPAs have an in-house expert on renewables, and whilst the majority of DC officers and planning committee members have received renewable energy training, the majority also felt that the training received had not been sufficient.
15.	The level of knowledge amongst DC officers and planning committee chairmen of most MGTs is basic or poor.

16.	The majority of householders and installers think the proposed changes to the GPDO to create permitted development rights for householder micro-generation are positive or very positive.
17.	The planning consultants, architects/technicians, DC officers, and planning consultants are less enthusiastic about the proposed changes to the GPDO, although more think they are positive than negative.
18.	DC officers think that the advice they give about micro-generation is consistent, but the majority of planning consultants, architects/technicians and installers think that the advice they receive is inconsistent.
19.	Few LPAs have a Merton-style policy within their current development plan.
20.	Most LPAs will have a Merton-style policy within their LDF, but there was a high level of uncertainty amongst policy officers on this topic.
21.	The pursuit of environmental objectives is generally seen to be important in terms of the overall priorities of the LPAs, although probably not the most important priority.
22.	Provision of on-site renewable energy technologies is not seen as an important or very important factor in determining a planning application for a housing scheme amongst either the DC officers or planning committee chairmen.
23.	The average waiting time for an installation is less than 3 months for the majority of installers.

APPENDIX 6 – Primary Data

Householders: data summary

Is Climate Change Happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	23	74.2	76.7	76.7
	No	1	3.2	3.3	80.0
	Not sure	6	19.4	20.0	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

How important is it to use more energy from renewable sources?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	17	54.8	56.7	56.7
	Important	12	38.7	40.0	96.7
	Unimportant	1	3.2	3.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

Have you heard of solar water heating?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	100.0	100.0	100.0

Have you heard of solar photovoltaic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	29.0	100.0	100.0
Missing	System	22	71.0		
Total		31	100.0		

Have you heard of heat pumps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	54.8	100.0	100.0
Missing	System	14	45.2		
Total		31	100.0		

Have you heard of biomass boilers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	32.3	100.0	100.0
Missing	System	21	67.7		
Total		31	100.0		

Have you heard of micro-wind turbines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	28	90.3	100.0	100.0
Missing	System	3	9.7		
Total		31	100.0		

Have you heard of micro hydro-power?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	45.2	100.0	100.0
Missing	System	17	54.8		

Total		31	100.0		

Have you heard of micro CHP?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	16.1	100.0	100.0
Missing	System	26	83.9		
Total		31	100.0		

Heard of none of the above

		Frequency	Percent
Missing	System	31	100.0

Have you installed/are you intending to install any of these micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	9.7	9.7	9.7
	No	28	90.3	90.3	100.0
	Total	31	100.0	100.0	

Which technology have you installed/are you going to install?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Solar water heating	1	3.2	33.3	33.3
	Micro wind turbines	2	6.5	66.7	100.0
	Total	3	9.7	100.0	
Missing	System	28	90.3		
Total		31	100.0		

Did you require planning permission for the installation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	6.5	100.0	100.0
Missing	System	29	93.5		
Total		31	100.0		

How easy was it to get planning permission?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	1	3.2	50.0	50.0
	Very difficult	1	3.2	50.0	100.0
	Total	2	6.5	100.0	
Missing	System	29	93.5		
Total		31	100.0		

How easy was it to find an installer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	1	3.2	50.0	50.0
	Difficult	1	3.2	50.0	100.0
	Total	2	6.5	100.0	
Missing	System	29	93.5		
Total		31	100.0		

Do you think that introducing a standard accreditation for renewable energy installers will be beneficial?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	3.2	33.3	33.3
	Don't know	2	6.5	66.7	100.0
	Total	3	9.7	100.0	
Missing	System	28	90.3		
Total		31	100.0		

What was/is likely to be the waiting time before the installation can take place?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 months	1	3.2	33.3	33.3
	6+ months	2	6.5	66.7	100.0
	Total	3	9.7	100.0	
Missing	System	28	90.3		
Total		31	100.0		

Have you ever considered installing a micro-renewable technology?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	38.7	48.0	48.0
	No	13	41.9	52.0	100.0
	Total	25	80.6	100.0	
Missing	System	6	19.4		
Total		31	100.0		

Reasons for not installing: Up-front cost of the technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	32.3	100.0	100.0
Missing	System	21	67.7		
Total		31	100.0		

Reasons for not installing: Additional costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	16.1	100.0	100.0
Missing	System	26	83.9		
Total		31	100.0		

Reasons for not installing: Length of pay-back time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	25.8	100.0	100.0
Missing	System	23	74.2		
Total		31	100.0		

Reasons for not installing: Lack of information about the technologies available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	12.9	100.0	100.0
Missing	System	27	87.1		
Total		31	100.0		

Reasons for not installing: Difficulty finding an installer

		Frequency	Percent
Missing	System	31	100.0

Reasons for not installing: Technical difficulties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	3.2	100.0	100.0
Missing	System	30	96.8		
Total		31	100.0		

Reasons for not installing: Waiting times for installation

		Frequency	Percent
Missing	System	31	100.0

Reasons for not installing: Difficulty getting PP

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	Yes	1	3.2	100.0	100.0
Missing	System	30	96.8		
Total		31	100.0		

Reasons for not installing: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	3.2	100.0	100.0
Missing	System	30	96.8		
Total		31	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		30	96.8	96.8	96.8
	Most appear to be sold by the equivalent of "double glazing salesmen"	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Which was the biggest reason for deciding not to go ahead with an installation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up-front cost of the technology	4	12.9	36.4	36.4
	Length of pay-back time	4	12.9	36.4	72.7
	Lack of information about the technologies available	2	6.5	18.2	90.9
	Other	1	3.2	9.1	100.0
	Total	11	35.5	100.0	
Missing	System	20	64.5		
Total		31	100.0		

Main reasons for considering an installation: Long term money saving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	29.0	100.0	100.0
Missing	System	22	71.0		
Total		31	100.0		

Main reasons for considering an installation: Worries about climate change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	25.8	100.0	100.0
Missing	System	23	74.2		
Total		31	100.0		

Main reasons for considering an installtion: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	3.2	100.0	100.0
Missing	System	30	96.8		
Total		31	100.0		

Other reason(s) for considering installing a micro-renewable technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		30	96.8	96.8	96.8
	To run outside lights	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Is the cost of installing micro-renewable technologies too high in comparison to the money-saving that you would gain?

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Yes, I agree	23	74.2	79.3	79.3
	I agree, but only for some technologies	1	3.2	3.4	82.8
	Not sure	5	16.1	17.2	100.0
	Total	29	93.5	100.0	
Missing	System	2	6.5		
Total		31	100.0		

Have you heard about the 'low carbon buildings' grants which are available to householders?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	22.6	23.3	23.3
	No	23	74.2	76.7	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

What is the longest timescale over which you would want to see your money back?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Within a year	3	9.7	10.7	10.7
	1-5 years	17	54.8	60.7	71.4
	6-10 years	7	22.6	25.0	96.4
	10-15 years	1	3.2	3.6	100.0
	Total	28	90.3	100.0	
Missing	System	3	9.7		
Total		31	100.0		

Do you think planning permission would be required for solar panels?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	54.8	54.8	54.8
	No	10	32.3	32.3	87.1
	Not sure	4	12.9	12.9	100.0
	Total	31	100.0	100.0	

Do you think planning permission would be required for heat pumps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	9.7	10.7	10.7
	No	17	54.8	60.7	71.4
	Not sure	8	25.8	28.6	100.0
	Total	28	90.3	100.0	
Missing	System	3	9.7		
Total		31	100.0		

Do you think planning permission would be required for biomass boilers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	6.5	7.7	7.7
	No	12	38.7	46.2	53.8
	Not sure	12	38.7	46.2	100.0
	Total	26	83.9	100.0	
Missing	System	5	16.1		
Total		31	100.0		

Do you think planning permission would be required for micro wind turbines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	20	64.5	66.7	66.7
	No	3	9.7	10.0	76.7
	Not sure	7	22.6	23.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

Do you think planning permission would be required for micro hydro-power?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	32.3	35.7	35.7
	No	3	9.7	10.7	46.4
	Not sure	15	48.4	53.6	100.0
	Total	28	90.3	100.0	
Missing	System	3	9.7		
Total		31	100.0		

How difficult or easy do you think it would be to get planning permission if you wanted to install a micro-renewable technology?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very difficult	4	12.9	13.3	13.3
	Difficult	15	48.4	50.0	63.3
	Not difficult	11	35.5	36.7	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

Obstacles to getting planning permission: Location of dwelling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	54.8	100.0	100.0
Missing	System	14	45.2		
Total		31	100.0		

Obstacles to getting planning permission: Neighbour objections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	16	51.6	100.0	100.0
Missing	System	15	48.4		
Total		31	100.0		

Obstacles to getting planning permission: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	25.8	88.9	88.9
	Not sure	1	3.2	11.1	100.0
	Total	9	29.0	100.0	
Missing	System	22	71.0		
Total		31	100.0		

Obstacles to getting planning permission: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	12.9	100.0	100.0
Missing	System	27	87.1		
Total		31	100.0		

Obstacles to getting planning permission: Unsupportive local councillors/planning commitee members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	9.7	100.0	100.0
Missing	System	28	90.3		
Total		31	100.0		

Obstacles to getting planning permission: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	6.5	100.0	100.0
Missing	System	29	93.5		
Total		31	100.0		

Reason

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid		29	93.5	93.5	93.5
	Adherence to freehold deeds	1	3.2	3.2	96.8
	Noise	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Opinions of the proposed changes to permitted development rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	7	22.6	22.6	22.6
	Positive	15	48.4	48.4	71.0
	Neutral	4	12.9	12.9	83.9
	Negative	4	12.9	12.9	96.8
	Not sure	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Reason

Valid
Can be very intrusive on the neighbourhood/neighbours
Could lead to a plethora of intrusive apparatus
Good to make these technologies more available
If there are complications people will not do it
It's a good idea but will people build unsightly and large installations
Need financial incentives
Needs to be encouraged and considered standard practice
Remove undue planning delays
Suspicious of any changes to planning law
The country covered by badly designed shoddy kit
The idea of PP puts a lot of people off
Too expensive and their manufacture uses energy
Visual impact - the area will look strange with hotchpotch of different types
Wind turbines - noisy
Wouldn't make much difference
Total

Opinions of requirement for development to install micro-renewables on all new housing developments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	16	51.6	51.6	51.6
	Positive	11	35.5	35.5	87.1
	Neutral	2	6.5	6.5	93.5
	Negative	1	3.2	3.2	96.8
	Not sure	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Reason

Valid
A good idea
Anything which will help to reduce carbon footprint is a good thing
Cheapest initial cost
Could become very messy and costly
Difficult to make it environmentally satisfactory if retro-fitted
Great idea if it deosn't increase the cost of housing
If you are keen for things to happen this is positive
It should aim for a higher percentage
Makes sense as easier for new houses than existing
Should be more than 10%
This is a positive step but questionwhether 10% is worth is
This is all distracting from the inevitable
This should become the norm for all development
Too many ill conceived policies are implemented through the planning regime
Total

Planning consultants: data summary

Types of work: Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	36.4	100.0	100.0
Missing	System	7	63.6		
Total		11	100.0		

Types of work: Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	36.4	100.0	100.0
Missing	System	7	63.6		
Total		11	100.0		

Types of work: One-off new house

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Types of work:Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	81.8	100.0	100.0
Missing	System	2	18.2		
Total		11	100.0		

Types of work: Large housing development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	81.8	100.0	100.0
Missing	System	2	18.2		
Total		11	100.0		

Types of work: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	54.5	54.5	54.5
	Anything and everything	1	9.1	9.1	63.6
	Commerical and retail	1	9.1	9.1	72.7
	Larger strategic projects	1	9.1	9.1	81.8
	Retail and employment	1	9.1	9.1	90.9
	Wide range	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Which of the following categories do the majority of your clients fit into?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Developers	6	54.5	60.0	60.0
	Mixture of both	2	18.2	20.0	80.0
	Other	2	18.2	20.0	100.0
	Total	10	90.9	100.0	
Missing	System	1	9.1		
Total		11	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		9	81.8	81.8	81.8
	All private sector clients	1	9.1	9.1	90.9
	Public sector	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

How would you best describe your knowledge of solar water heating?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	27.3	27.3	27.3
	Basic	6	54.5	54.5	81.8
	Poor	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

How would you best describe your knowledge of solar photovoltaic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	4	36.4	36.4	36.4
	Basic	5	45.5	45.5	81.8
	Poor	1	9.1	9.1	90.9
	Haven't heard of	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

How would you best describe your knowledge of heat pumps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	3	27.3	27.3	27.3
	Basic	5	45.5	45.5	72.7
	Poor	2	18.2	18.2	90.9
	Very poor	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

How would you best describe your knowledge of biomass boilers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	4	36.4	40.0	40.0
	Basic	4	36.4	40.0	80.0
	Poor	2	18.2	20.0	100.0
	Total	10	90.9	100.0	
Missing	System	1	9.1		
Total		11	100.0		

How would you best describe your knowledge of micro wind turbines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	1	9.1	9.1	9.1
	Good	3	27.3	27.3	36.4
	Basic	5	45.5	45.5	81.8
	Poor	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

How would you best describe your knowledge of micro hydro?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	9.1	9.1	9.1
	Basic	2	18.2	18.2	27.3
	Poor	5	45.5	45.5	72.7
	Very poor	1	9.1	9.1	81.8
	Haven't heard of	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

How would you best describe your knowledge of micro CHP

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	Good	3	27.3	27.3	27.3
	Basic	3	27.3	27.3	54.5
	Poor	3	27.3	27.3	81.8
	Very poor	1	9.1	9.1	90.9
	Haven't heard of	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

What proportion of clients initially express an interest in incorporating micro-renewables? Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	4	36.4	50.0	50.0
	26-50%	1	9.1	12.5	62.5
	n/a	3	27.3	37.5	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	5	45.5	55.6	55.6
	26-50%	1	9.1	11.1	66.7
	n/a	3	27.3	33.3	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? One-off new houses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	4	36.4	44.4	44.4
	26-50%	1	9.1	11.1	55.6
	51-75%	2	18.2	22.2	77.8
	n/a	2	18.2	22.2	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	6	54.5	54.5	54.5
	26-50%	1	9.1	9.1	63.6
	51-75%	2	18.2	18.2	81.8
	n/a	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

What proportion of clients initially express an interest in incorporating micro-renewables? Large housing development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	5	45.5	45.5	45.5
	26-50%	3	27.3	27.3	72.7
	51-75%	1	9.1	9.1	81.8
	76-100%	1	9.1	9.1	90.9
	n/a	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

What propOrtion of those initially interested in micro-renewables actually end up installing it? Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	4	36.4	50.0	50.0
	n/a	4	36.4	50.0	100.0
	Total	8	72.7	100.0	
Missing	System	3	27.3		
Total		11	100.0		

What propOrtion of those initially interested in micro-renewables actually end up installing it? Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	4	36.4	44.4	44.4
	26-50%	1	9.1	11.1	55.6
	n/a	4	36.4	44.4	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

What propertion of those initially interested in micro-renewables actually end up installing it? One-off new houses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	4	36.4	44.4	44.4
	51-75%	2	18.2	22.2	66.7
	n/a	3	27.3	33.3	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

What propertion of those initially interested in micro-renewables actually end up installing it? Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	5	45.5	45.5	45.5
	26-50%	2	18.2	18.2	63.6
	51-75%	1	9.1	9.1	72.7
	n/a	3	27.3	27.3	100.0
	Total	11	100.0	100.0	

What propertion of those initially interested in micro-renewables actually end up installing it? Large housing development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	4	36.4	36.4	36.4
	26-50%	2	18.2	18.2	54.5
	51-75%	2	18.2	18.2	72.7
	76-100%	1	9.1	9.1	81.8
	n/a	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

What is your clients' main motivation for installing micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Long-term cost savings	2	18.2	20.0	20.0
	Worries about climate change	1	9.1	10.0	30.0
	Not sure	1	9.1	10.0	40.0
	Other	6	54.5	60.0	100.0
	Total	10	90.9	100.0	
Missing	System	1	9.1		
Total		11	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	45.5	45.5	45.5
	Enforced by LPAs	1	9.1	9.1	54.5
	Mixture of planning policy requirements and a genuine desire to make a difference	1	9.1	9.1	63.6
	Necessary to secure land/consents	1	9.1	9.1	72.7
	only where percieved as a benefit in the planning process	1	9.1	9.1	81.8
	Policy requirements	1	9.1	9.1	90.9
	To comply with planning requirements	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Reasons for not going ahead with an installation: Up-front cost of the technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Reasons for not going ahead with an installation: Additional costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	18.2	100.0	100.0
Missing	System	9	81.8		
Total		11	100.0		

Reasons for not going ahead with an installation: Length of pay-back time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	54.5	100.0	100.0
Missing	System	5	45.5		
Total		11	100.0		

Reasons for not going ahead with an installation: Lack of information about the technologies available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	18.2	100.0	100.0
Missing	System	9	81.8		
Total		11	100.0		

Reasons for not going ahead with an installation: Difficulty finding an installer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

Reasons for not going ahead with an installation: Technical difficulties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	18.2	100.0	100.0
Missing	System	9	81.8		
Total		11	100.0		

Reasons for not going ahead with an installation: Waiting times for an installation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	18.2	100.0	100.0
Missing	System	9	81.8		
Total		11	100.0		

Reasons for not going ahead with an installation: Difficulty getting planning permission

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

What is the biggest reason for customers deciding not to go ahead with an installation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up-front cost of the technology	5	45.5	71.4	71.4
	Length of pay-back time	2	18.2	28.6	100.0
	Total	7	63.6	100.0	
Missing	System	4	36.4		
Total		11	100.0		

Is the cost of installing micro-renewable technologies too high in comparison to the money-savings that are likely to be made?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I agree	8	72.7	72.7	72.7
	I agree, but only for some technologies	1	9.1	9.1	81.8
	Not sure	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

Are you aware of the 'low carbon buildings' grants which are available to householders?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, and we provide clients with details	2	18.2	18.2	18.2
	Yes, but we don't provide this type of advice to clients	6	54.5	54.5	72.7
	No	3	27.3	27.3	100.0
	Total	11	100.0	100.0	

How easy is it to find an installer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	1	9.1	9.1	9.1
	Neither easy nor difficult	4	36.4	36.4	45.5
	Difficult	1	9.1	9.1	54.5
	Don't know	5	45.5	45.5	100.0
	Total	11	100.0	100.0	

Do you thinking introducing a standard accreditation for renewable energy installers will be beneficial?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	72.7	72.7	72.7
	Don't know	2	18.2	18.2	90.9
	11.00	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

How consistent is advice received from LPAs about whether planning permission is required for micro-renewable installations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fairly consistent	2	18.2	20.0	20.0
	Inconsistent	3	27.3	30.0	50.0
	N/A or don't know	5	45.5	50.0	100.0
	Total	10	90.9	100.0	
Missing	System	1	9.1		
Total		11	100.0		

How easy do you think it is to get planning permission: Solar water heating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	5	45.5	45.5	45.5
	Difficult	4	36.4	36.4	81.8
	Very difficult	2	18.2	18.2	100.0
	Total	11	100.0	100.0	

How easy do you think it is to get planning permission: Solar photovoltaic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	5	45.5	45.5	45.5
	Difficult	3	27.3	27.3	72.7
	Very difficult	3	27.3	27.3	100.0
	Total	11	100.0	100.0	

How easy do you think it is to get planning permission: Heat pumps

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Neither easy nor difficult	4	36.4	36.4	36.4
	Difficult	4	36.4	36.4	72.7
	Very difficult	3	27.3	27.3	100.0
	Total	11	100.0	100.0	

How easy do you think it is to get planning permission: Biomass boilers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	1	9.1	9.1	9.1
	Neither easy nor difficult	3	27.3	27.3	36.4
	Difficult	3	27.3	27.3	63.6
	Very difficult	4	36.4	36.4	100.0
	Total	11	100.0	100.0	

How easy do you think it is to get planning permission: Micro wind turbines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very easy	4	36.4	36.4	36.4
	Easy	2	18.2	18.2	54.5
	Neither easy nor difficult	1	9.1	9.1	63.6
	Very difficult	4	36.4	36.4	100.0
	Total	11	100.0	100.0	

How easy do you think it is to get planning permission: Micro hydro-power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very easy	1	9.1	9.1	9.1
	Neither easy nor difficult	1	9.1	9.1	18.2
	Very difficult	9	81.8	81.8	100.0
	Total	11	100.0	100.0	

How easy do you think it is to get planning permission: Micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	2	18.2	18.2	18.2
	Neither easy nor difficult	1	9.1	9.1	27.3
	Very difficult	8	72.7	72.7	100.0
	Total	11	100.0	100.0	

Obstacles to getting planning permission: Location of dwelling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Obstacles to getting planning permission: Neighbour objections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	72.7	100.0	100.0
Missing	System	3	27.3		
Total		11	100.0		

Obstacles to getting planning permission: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	9.1	100.0	100.0
Missing	System	10	90.9		
Total		11	100.0		

Obstacles to getting planning permission: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	9.1	100.0	100.0
Missing	System	10	90.9		

Total		11	100.0		

Obstacles to getting planning permission: Unsupportive local councillors/planning commitee members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	36.4	100.0	100.0
Missing	System	7	63.6		
Total		11	100.0		

Would you usually seek advice from the LPA during the course of a development?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	90.9	90.9	90.9
	No	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

At what stage would you normally first seek advice from the LPA?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prior to submitting a planning application	10	90.9	100.0	100.0
Missing	System	1	9.1		
Total		11	100.0		

Opinion of the advice you normally receive from the LPA?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfactory	4	36.4	44.4	44.4
	Unsatisfactory	1	9.1	11.1	55.6
	Varies, depending on the Authority	4	36.4	44.4	100.0
	Total	9	81.8	100.0	
Missing	System	2	18.2		
Total		11	100.0		

Problems encountered with the LPA: None normally encountered

		Frequency	Percent
Missing	System	11	100.0

Problems encountered with the LPA: Inconsistency in the advice provided

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	63.6	100.0	100.0
Missing	System	4	36.4		
Total		11	100.0		

Problems encountered with the LPA: Poor quality of advice given

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	27.3	100.0	100.0
Missing	System	8	72.7		
Total		11	100.0		

Problems encountered with the LPA: Advice provided too late in the process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	27.3	100.0	100.0
Missing	System	8	72.7		
Total		11	100.0		

Problems encountered with the LPA: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	9.1	100.0	100.0

Missing	System	10	90.9		
Total		11	100.0		

Problems encountered with the LPA: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	18.2	100.0	100.0
Missing	System	9	81.8		
Total		11	100.0		

Problems encountered with the LPA: Unsupportive local councillors/planning committee members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	45.5	100.0	100.0
Missing	System	6	54.5		
Total		11	100.0		

Problems encountered with the LPA: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	27.3	100.0	100.0
Missing	System	8	72.7		
Total		11	100.0		

Other

Valid
Lack of resources and complex priorities
Lack of resources, lack of contactability, lack of senior personnel
Long delays in getting a response
Total

Opinions of the proposed changes to permitted development rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	2	18.2	18.2	18.2
	Positive	3	27.3	27.3	45.5
	Neutral	3	27.3	27.3	72.7
	Negative	2	18.2	18.2	90.9
	Not aware of the proposed changes	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Reason

Valid
Reduces possibility of unnecessary neighbour objection
Removes complications
Should help increase take-up by removing barriers
Simplification
Visual effect/loss of residential amenity
Without control - more dispute
Won't make much difference
Total

Opinions of requirement for development to install micro-renewables on all new housing developments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	2	18.2	18.2	18.2
	Positive	6	54.5	54.5	72.7
	Neutral	2	18.2	18.2	90.9
	Negative	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Reason

Valid	
	eventually the penny will drop and developers will appreciate the need to combat cc
	good idea but may miss bigger picture and may not be most appropriate
	increased burden on developers - will inhibit house building further
	Makes people think about energy
	Positive envt contribution but low target and weak policy
	Will bring developers to the table so that when figure increases to 20% and beyond any initial resis
	Total

Do you believe that human-induced climate change is happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	90.9	90.9	90.9
	No	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Architects/Architectural Technicians: data summary

Types of work: Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	77.8	100.0	100.0
Missing	System	4	22.2		
Total		18	100.0		

Types of work: Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	61.1	100.0	100.0
Missing	System	7	38.9		
Total		18	100.0		

Types of work: One-off new house

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	66.7	100.0	100.0
Missing	System	6	33.3		
Total		18	100.0		

Types of work:Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	50.0	100.0	100.0
Missing	System	9	50.0		
Total		18	100.0		

Types of work: Large housing development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	33.3	100.0	100.0
Missing	System	12	66.7		
Total		18	100.0		

Types of work: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	38.9	100.0	100.0
Missing	System	11	61.1		
Total		18	100.0		

Other

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid		12	66.7	66.7	66.7
	Affordable housing	1	5.6	5.6	72.2
	Church halls and community buildings	1	5.6	5.6	77.8
	Commercial	1	5.6	5.6	83.3
	detailing for architectural practices/specialist contractors/curtain walling/sound facilities	1	5.6	5.6	88.9
	Education	1	5.6	5.6	94.4
	Schools	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

Which of the following categories do the majority of your clients fit into?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Householders	7	38.9	41.2	41.2
	Developers	2	11.1	11.8	52.9
	Mixture of both	6	33.3	35.3	88.2
	Other	2	11.1	11.8	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		16	88.9	88.9	88.9
	Housing associations	1	5.6	5.6	94.4
	Various	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

How would you best describe your knowledge of solar water heating?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	3	16.7	17.6	17.6
	Good	6	33.3	35.3	52.9
	Basic	6	33.3	35.3	88.2
	Poor	1	5.6	5.9	94.1
	Very poor	1	5.6	5.9	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

How would you best describe your knowledge of solar photovoltaic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	2	11.1	11.8	11.8
	Good	6	33.3	35.3	47.1
	Basic	5	27.8	29.4	76.5
	Poor	1	5.6	5.9	82.4
	Very poor	1	5.6	5.9	88.2
	Haven't heard of	2	11.1	11.8	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

How would you best describe your knowledge of heat pumps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	6	33.3	33.3	33.3
	Basic	9	50.0	50.0	83.3
	Poor	2	11.1	11.1	94.4
	Very poor	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

How would you best describe your knowledge of biomass boilers?

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Good	5	27.8	27.8	27.8
	Basic	6	33.3	33.3	61.1
	Poor	5	27.8	27.8	88.9
	Very poor	1	5.6	5.6	94.4
	Haven't heard of	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

How would you best describe your knowledge of micro wind turbines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	2	11.1	11.1	11.1
	Good	4	22.2	22.2	33.3
	Basic	7	38.9	38.9	72.2
	Poor	4	22.2	22.2	94.4
	Very poor	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

How would you best describe your knowledge of micro hydro?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic	6	33.3	33.3	33.3
	Poor	9	50.0	50.0	83.3
	Very poor	1	5.6	5.6	88.9
	Haven't heard of	2	11.1	11.1	100.0
	Total	18	100.0	100.0	

How would you best describe your knowledge of micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	1	5.6	5.6	5.6
	Basic	8	44.4	44.4	50.0
	Poor	7	38.9	38.9	88.9
	Very poor	1	5.6	5.6	94.4
	Haven't heard of	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

What proportion of clients initially express an interest in incorporating micro-renewables? Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	12	66.7	70.6	70.6
	26-50%	1	5.6	5.9	76.5
	51-75%	1	5.6	5.9	82.4
	76-100%	1	5.6	5.9	88.2
	n/a	2	11.1	11.8	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	10	55.6	66.7	66.7
	26-50%	1	5.6	6.7	73.3
	51-75%	1	5.6	6.7	80.0
	76-100%	1	5.6	6.7	86.7
	n/a	2	11.1	13.3	100.0
	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? One-off new houses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	7	38.9	46.7	46.7
	26-50%	2	11.1	13.3	60.0
	51-75%	2	11.1	13.3	73.3
	76-100%	1	5.6	6.7	80.0
	n/a	3	16.7	20.0	100.0

	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	5	27.8	41.7	41.7
	26-50%	2	11.1	16.7	58.3
	76-100%	2	11.1	16.7	75.0
	n/a	3	16.7	25.0	100.0
	Total	12	66.7	100.0	
Missing	System	6	33.3		
Total		18	100.0		

What proportion of clients initially express an interest in incorporating micro-renewables? Large housing development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	3	16.7	37.5	37.5
	51-75%	1	5.6	12.5	50.0
	76-100%	2	11.1	25.0	75.0
	n/a	2	11.1	25.0	100.0
	Total	8	44.4	100.0	
Missing	System	10	55.6		
Total		18	100.0		

What proportion of those initially interested in micro-renewables actually end up installing it? Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	14	77.8	82.4	82.4
	51-75%	1	5.6	5.9	88.2
	n/a	2	11.1	11.8	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

What proportion of those initially interested in micro-renewables actually end up installing it? Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	11	61.1	73.3	73.3
	26-50%	2	11.1	13.3	86.7
	n/a	2	11.1	13.3	100.0
	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

What proportion of those initially interested in micro-renewables actually end up installing it? One-off new houses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	9	50.0	64.3	64.3
	51-75%	2	11.1	14.3	78.6
	n/a	3	16.7	21.4	100.0
	Total	14	77.8	100.0	
Missing	System	4	22.2		
Total		18	100.0		

What proportion of those initially interested in micro-renewables actually end up installing it? Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	7	38.9	58.3	58.3
	51-75%	1	5.6	8.3	66.7
	76-100%	1	5.6	8.3	75.0
	n/a	3	16.7	25.0	100.0
	Total	12	66.7	100.0	
Missing	System	6	33.3		
Total		18	100.0		

What proportion of those initially interested in micro-renewables actually end up installing it? Large housing development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	2	11.1	28.6	28.6
	51-75%	1	5.6	14.3	42.9
	76-100%	1	5.6	14.3	57.1
	n/a	3	16.7	42.9	100.0
	Total	7	38.9	100.0	
Missing	System	11	61.1		
Total		18	100.0		

Technology ranked according to popularity with clients: Solar water heating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	2	11.1	13.3	13.3
	Neither popular nor unpopular	5	27.8	33.3	46.7
	Popular	5	27.8	33.3	80.0
	Very popular	3	16.7	20.0	100.0
	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

Technology ranked according to popularity with clients: Solar photovoltaic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	2	11.1	15.4	15.4
	Unpopular	1	5.6	7.7	23.1
	Neither popular nor unpopular	7	38.9	53.8	76.9
	Popular	2	11.1	15.4	92.3
	Very popular	1	5.6	7.7	100.0
	Total	13	72.2	100.0	
Missing	System	5	27.8		
Total		18	100.0		

Technology ranked according to popularity with clients: Heat pumps

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	2	11.1	13.3	13.3
	Unpopular	3	16.7	20.0	33.3
	Neither popular nor unpopular	5	27.8	33.3	66.7
	Popular	2	11.1	13.3	80.0
	Very popular	3	16.7	20.0	100.0
	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

Technology ranked according to popularity with clients: Biomass boilers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	3	16.7	23.1	23.1
	Unpopular	2	11.1	15.4	38.5
	Neither popular nor unpopular	6	33.3	46.2	84.6
	Popular	2	11.1	15.4	100.0
	Total	13	72.2	100.0	
Missing	System	5	27.8		
Total		18	100.0		

Technology ranked according to popularity with clients: Micro wind turbines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	5	27.8	33.3	33.3
	Unpopular	5	27.8	33.3	66.7
	Neither popular nor unpopular	4	22.2	26.7	93.3
	Very popular	1	5.6	6.7	100.0

	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

Technology ranked according to popularity with clients: Micro hydro-power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	7	38.9	63.6	63.6
	Unpopular	2	11.1	18.2	81.8
	Neither popular nor unpopular	2	11.1	18.2	100.0
	Total	11	61.1	100.0	
Missing	System	7	38.9		
Total		18	100.0		

Technology ranked according to popularity with clients: Micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very unpopular	6	33.3	54.5	54.5
	Unpopular	1	5.6	9.1	63.6
	Neither popular nor unpopular	3	16.7	27.3	90.9
	Popular	1	5.6	9.1	100.0
	Total	11	61.1	100.0	
Missing	System	7	38.9		
Total		18	100.0		

What is your clients' main motivation for installing micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Long-term cost savings	10	55.6	58.8	58.8
	Worries about climate change	4	22.2	23.5	82.4
	Not sure	1	5.6	5.9	88.2
	Other	2	11.1	11.8	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		16	88.9	88.9	88.9
	Fulfil expectations of a responsible developer or planning requirement	1	5.6	5.6	94.4
	Trend following	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

Reasons for not going ahead with an installation: Up-front cost of the technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	15	83.3	100.0	100.0
Missing	System	3	16.7		
Total		18	100.0		

Reasons for not going ahead with an installation: Additional costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	16.7	100.0	100.0
Missing	System	15	83.3		
Total		18	100.0		

Reasons for not going ahead with an installation: Length of pay-back time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	55.6	100.0	100.0
Missing	System	8	44.4		

Total		18	100.0		

Reasons for not going ahead with an installation: Lack of information about the technologies available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	11.1	100.0	100.0
Missing	System	16	88.9		
Total		18	100.0		

Reasons for not going ahead with an installation: Difficulty finding an installer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	22.2	100.0	100.0
Missing	System	14	77.8		
Total		18	100.0		

Reasons for not going ahead with an installation: Technical difficulties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	11.1	100.0	100.0
Missing	System	16	88.9		
Total		18	100.0		

Reasons for not going ahead with an installation: Waiting times for an installation

		Frequency	Percent
Missing	System	18	100.0

Reasons for not going ahead with an installation: Difficulty getting planning permission

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	5.6	100.0	100.0
Missing	System	17	94.4		
Total		18	100.0		

What is the biggest reason for customers deciding not to go ahead with an installation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up-front cost of the technology	9	50.0	60.0	60.0
	Length of pay-back time	6	33.3	40.0	100.0
	Total	15	83.3	100.0	
Missing	System	3	16.7		
Total		18	100.0		

Is the cost of installing micro-renewable technologies too high in comparison to the money-savings that are likely to be made?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I agree	12	66.7	66.7	66.7
	I agree, but only for some technologies	6	33.3	33.3	100.0
	Total	18	100.0	100.0	

Are you aware of the 'low carbon buildings' grants which are available to householders?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, and we provide clients with details	5	27.8	27.8	27.8
	Yes, but we don't provide this type of advice to clients	7	38.9	38.9	66.7
	No	6	33.3	33.3	100.0
	Total	18	100.0	100.0	

How easy is it to find an installer?

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Very easy	1	5.6	5.6	5.6
	Easy	3	16.7	16.7	22.2
	Neither easy nor difficult	4	22.2	22.2	44.4
	Difficult	5	27.8	27.8	72.2
	Don't know	5	27.8	27.8	100.0
	Total	18	100.0	100.0	

Do you thinking introducing a standard accreditation for renewable energy installers will be beneficial?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	50.0	52.9	52.9
	No	2	11.1	11.8	64.7
	Don't know	6	33.3	35.3	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

What proportion of the micro-renewable technologies which you design into schemes require planning permission?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	3	16.7	18.8	18.8
	1-25%	11	61.1	68.8	87.5
	76-100%	2	11.1	12.5	100.0
	Total	16	88.9	100.0	
Missing	System	2	11.1		
Total		18	100.0		

How consistent is advice received from LPAs about whether planning permission is required for micro-renewable installations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consistent	2	11.1	11.8	11.8
	Fairly consistent	2	11.1	11.8	23.5
	Inconsistent	5	27.8	29.4	52.9
	N/A or don't know	8	44.4	47.1	100.0
	Total	17	94.4	100.0	
Missing	System	1	5.6		
Total		18	100.0		

How easy do you think it is to get planning permission: Solar water heating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	4	22.2	22.2	22.2
	Neither easy nor difficult	7	38.9	38.9	61.1
	Difficult	3	16.7	16.7	77.8
	Very difficult	4	22.2	22.2	100.0
	Total	18	100.0	100.0	

How easy do you think it is to get planning permission: Solar photovoltaic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	4	22.2	22.2	22.2
	Neither easy nor difficult	7	38.9	38.9	61.1
	Difficult	2	11.1	11.1	72.2
	Very difficult	5	27.8	27.8	100.0
	Total	18	100.0	100.0	

How easy do you think it is to get planning permission: Heat pumps

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	3	16.7	16.7	16.7
	Difficult	9	50.0	50.0	66.7
	Very difficult	6	33.3	33.3	100.0
	Total	18	100.0	100.0	

How easy do you think it is to get planning permission: Biomass boilers

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	Neither easy nor difficult	2	11.1	11.1	11.1
	Difficult	8	44.4	44.4	55.6
	Very difficult	8	44.4	44.4	100.0
	Total	18	100.0	100.0	

How easy do you think it is to get planning permission: Micro wind turbines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very easy	1	5.6	5.6	5.6
	Easy	7	38.9	38.9	44.4
	Neither easy nor difficult	1	5.6	5.6	50.0
	Difficult	1	5.6	5.6	55.6
	Very difficult	8	44.4	44.4	100.0
	Total	18	100.0	100.0	

How easy do you think it is to get planning permission: Micro hydro-power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very easy	1	5.6	5.6	5.6
	Neither easy nor difficult	1	5.6	5.6	11.1
	Difficult	1	5.6	5.6	16.7
	Very difficult	15	83.3	83.3	100.0
	Total	18	100.0	100.0	

How easy do you think it is to get planning permission: Micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	1	5.6	5.6	5.6
	Difficult	5	27.8	27.8	33.3
	Very difficult	12	66.7	66.7	100.0
	Total	18	100.0	100.0	

Obstacles to getting planning permission: Location of dwelling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	77.8	100.0	100.0
Missing	System	4	22.2		
Total		18	100.0		

Obstacles to getting planning permission: Neighbour objections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	44.4	100.0	100.0
Missing	System	10	55.6		
Total		18	100.0		

Obstacles to getting planning permission: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	22.2	100.0	100.0
Missing	System	14	77.8		
Total		18	100.0		

Obstacles to getting planning permission: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	38.9	100.0	100.0
Missing	System	11	61.1		
Total		18	100.0		

Obstacles to getting planning permission: Unsupportive local councillors/planning commitee members

		Frequency	Percent
Missing	System	18	100.0

Obstacles to getting planning permission: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	5.6	100.0	100.0
Missing	System	17	94.4		
Total		18	100.0		

Would you usually seek advice from the LPA during the course of a development?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	100.0	100.0	100.0

At what stage would you normally first seek advice from the LPA?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prior to submitting a planning application	18	100.0	100.0	100.0

Other

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	100.0	100.0	100.0

Opinion of the advice you normally receive from the LPA?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Highly satisfactory	1	5.6	5.6	5.6
	Satisfactory	7	38.9	38.9	44.4
	Unsatisfactory	2	11.1	11.1	55.6
	Highly unsatisfactory	1	5.6	5.6	61.1
	Varies, depending on the Authority	7	38.9	38.9	100.0
	Total	18	100.0	100.0	

Problems encountered with the LPA: None normally encountered

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	5.6	100.0	100.0
Missing	System	17	94.4		
Total		18	100.0		

Problems encountered with the LPA: Inconsistency in the advice provided

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	72.2	100.0	100.0
Missing	System	5	27.8		
Total		18	100.0		

Problems encountered with the LPA: Poor quality of advice given

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	22.2	100.0	100.0
Missing	System	14	77.8		
Total		18	100.0		

Problems encountered with the LPA: Advice provided too late in the process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	33.3	100.0	100.0
Missing	System	12	66.7		
Total		18	100.0		

Problems encountered with the LPA: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	16.7	100.0	100.0
Missing	System	15	83.3		
Total		18	100.0		

Problems encountered with the LPA: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	16.7	100.0	100.0
Missing	System	15	83.3		
Total		18	100.0		

Problems encountered with the LPA: Unsupportive local councillors/planning committee members

		Frequency	Percent
Missing	System	18	100.0

Problems encountered with the LPA: Other

		Frequency	Percent
Missing	System	18	100.0

Other

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	100.0	100.0	100.0

Opinions of the proposed changes to permitted development rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	2	11.1	11.1	11.1
	Positive	6	33.3	33.3	44.4
	Neutral	3	16.7	16.7	61.1
	Negative	3	16.7	16.7	77.8
	Not sure	2	11.1	11.1	88.9
	Not aware of the proposed changes	2	11.1	11.1	100.0
	Total	18	100.0	100.0	

Reason

Valid
Allows owners to asses their own properties without paperwork and form filling
Control should be retained to prevent visual degradation of the streetscene
Lack of public knowledge and engineering information
Monitoring must remain in place in the form of planning applications to avoid "cowboys" and DIY need to see the detail
Total

Opinions of requirement for development to install micro-renewables on all new housing developments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	3	16.7	16.7	16.7
	Positive	9	50.0	50.0	66.7
	Neutral	3	16.7	16.7	83.3
	Negative	2	11.1	11.1	94.4
	Not aware of the proposed changes	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

Reason

Valid
Developers should have a responsibility, but the cost may be passed to home buyers
It should help the environment
More work for designers, more complex building regs etc

	Other more effective methods to improve insulation
	Taxing people via hh improvements when there are other targets(cars/business could do more)
	this is a step in the right direction
	Total

Do you believe that human-induced climate change is happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	66.7	66.7	66.7
	No	1	5.6	5.6	72.2
	Not sure	5	27.8	27.8	100.0
	Total	18	100.0	100.0	

LPAs Development Control: data summary

How many enquiries does your department received relating to small-scale, domestic renewewable energy technologies, per week?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-10	12	100.0	100.0	100.0

Which of the following groups is the main source of these enquiries?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Householders	11	91.7	91.7	91.7
	Agents/architects	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Enquiries regularly received: Renewable energy installations on their own

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	83.3	100.0	100.0
Missing	System	2	16.7		
Total		12	100.0		

Enquiries regularly received: Domestic extensions and alterations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	58.3	100.0	100.0
Missing	System	5	41.7		
Total		12	100.0		

Enquiries regularly received: Residential conversions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	8.3	100.0	100.0
Missing	System	11	91.7		
Total		12	100.0		

Enquiries regularly received: One-off houses

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	33.3	100.0	100.0
Missing	System	8	66.7		
Total		12	100.0		

Enquiries regularly received: Small housing groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	8.3	100.0	100.0
Missing	System	11	91.7		
Total		12	100.0		

Enquiries regularly received: Large housing developments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	16.7	100.0	100.0
Missing	System	10	83.3		
Total		12	100.0		

Enquiries regularly received: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	16.7	100.0	100.0
Missing	System	10	83.3		
Total		12	100.0		

Other

Valid
Don't receive many enquiries
Small non-domestic craft developments in the countryside
Total

Enquiries regularly received: Solar water heating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	100.0	100.0
Missing	System	3	25.0		
Total		12	100.0		

Enquiries regularly received: Solar photovoltaic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	50.0	100.0	100.0
Missing	System	6	50.0		
Total		12	100.0		

Enquiries regularly received: Heat pumps

		Frequency	Percent
Missing	System	12	100.0

Enquiries regularly received: Biomass boilers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	8.3	100.0	100.0
Missing	System	11	91.7		
Total		12	100.0		

Enquiries regularly received: Micro wind turbines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	100.0	100.0
Missing	System	3	25.0		
Total		12	100.0		

Enquiries regularly received: Micro hydro-power

		Frequency	Percent
Missing	System	12	100.0

Enquiries regularly received: Micro CHP

		Frequency	Percent
Missing	System	12	100.0

How would you best describe your knowledge of solar water heating?

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	Good	2	16.7	16.7	16.7
	Basic	10	83.3	83.3	100.0
	Total	12	100.0	100.0	

How would you best describe your knowledge of solar photovoltaic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	4	33.3	33.3	33.3
	Basic	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

How would you best describe your knowledge of heat pumps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	8.3	8.3	8.3
	Basic	6	50.0	50.0	58.3
	Poor	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

How would you best describe your knowledge of biomass boilers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	8.3	9.1	9.1
	Basic	3	25.0	27.3	36.4
	Poor	6	50.0	54.5	90.9
	Haven't heard of	1	8.3	9.1	100.0
	Total	11	91.7	100.0	
Missing	System	1	8.3		
Total		12	100.0		

How would you best describe your knowledge of micro wind turbines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	4	33.3	33.3	33.3
	Basic	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

How would you best describe your knowledge of micro hydro?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic	3	25.0	25.0	25.0
	Poor	7	58.3	58.3	83.3
	Very poor	1	8.3	8.3	91.7
	Haven't heard of	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

How would you best describe your knowledge of micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic	4	33.3	33.3	33.3
	Poor	5	41.7	41.7	75.0
	Very poor	1	8.3	8.3	83.3
	Haven't heard of	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Does your Local Authority have an in-house expert who can provide advice, both internally to the planning department, and externally to customers, about micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	41.7	41.7	41.7
	No	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Have you or any of the development control team attended training courses/conferences on planning and renewable energy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	75.0	75.0
	No	3	25.0	25.0	100.0
	Total	12	100.0	100.0	

Do you think that sufficient training is provided for Development Control officers on planning and renewable energy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	25.0	25.0	25.0
	No	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

How consistent is the advice provided by your Development Control department on whether planning permission is needed for micro-renewable installations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consistent	5	41.7	41.7	41.7
	Fairly consistent	6	50.0	50.0	91.7
	Inconsistent	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Opinions of the proposed changes to permitted development rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	2	16.7	16.7	16.7
	Positive	4	33.3	33.3	50.0
	Neutral	4	33.3	33.3	83.3
	Not sure	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Reason

Valid	
	Difficult for public to understand PD limits
	May be an over simplistic response that fails to recognise the broader environmental impacts of this
	Planning control should not restrict technology that is environmentally beneficial
	Questions of practicality. Does not site comfortably with aim to simplify PD regime
	Simply the process and allow national consistency
	Still require similar enquiries
	Until the legislation is provided in more detail it is difficult to judge its impact
	Will provide quidance to avoid the numerous inconsistencies that arise as a result of interpretation
	Will reduce number of applications
	Total

Does your adopted Local Plan/Unitary Development Plan contain a 'Merton-style' policy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	8.3	8.3	8.3
	No	11	91.7	91.7	100.0
	Total	12	100.0	100.0	

Will your LDF include such a policy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	58.3	58.3	58.3
	3.00	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Opinion of the impact that these 'Merton-style' policies will have

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive	8	66.7	66.7	66.7
	Neutral	1	8.3	8.3	75.0
	Negative	1	8.3	8.3	83.3
	Not sure	2	16.7	16.7	100.0

	Total	12	100.0	100.0

Reason

Valid	
	keen to encourage green/sustainable energy production
	LPA should be leading the way
	No experience of operation of such policies
	Should be dealt with through the building regs
	These policies are vital if we expect the planning system to play a part in creating a sustainable s
	Without such policies very, very, very few developers would include such measures
	Total

How would you feel about negotiating with developers for provision of on-site micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Comfortable	7	58.3	58.3	58.3
	Neither comfortable or uncomfortable	4	33.3	33.3	91.7
	Uncomfortable	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Is there/ do you think there would be much objection to this type of 'Merton-style' policy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	75.0	75.0
	No	2	16.7	16.7	91.7
	11.00	1	8.3	8.3	100.0
	Total	12	100.0	100.0	

Objection to this type of policy: Householders

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	25.0	100.0	100.0
Missing	System	9	75.0		
Total		12	100.0		

Objection to this type of policy: Developers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	66.7	100.0	100.0
Missing	System	4	33.3		
Total		12	100.0		

Objection to this type of policy: Landowners

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	25.0	100.0	100.0
Missing	System	9	75.0		
Total		12	100.0		

Objection to this type of policy: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	16.7	100.0	100.0
Missing	System	10	83.3		
Total		12	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		10	83.3	83.3	83.3
	Government Office	1	8.3	8.3	91.7
	Neighbours depending on type	1	8.3	8.3	100.0

	of technology				
	Total	12	100.0	100.0	

Main reasons for opposition: Unwillingness of developers to comply

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	50.0	100.0	100.0
Missing	System	6	50.0		
Total		12	100.0		

Main reasons for opposition: Negative effect on viability of development sites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	50.0	100.0	100.0
Missing	System	6	50.0		
Total		12	100.0		

Main reasons for opposition: Concerns about impacts on landscape or character of the area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	16.7	100.0	100.0
Missing	System	10	83.3		
Total		12	100.0		

Main reasons for opposition: Concerns about impacts on neighbours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	16.7	100.0	100.0
Missing	System	10	83.3		
Total		12	100.0		

Main reasons for opposition: Lack of expertise within the Planning department/Local Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	16.7	100.0	100.0
Missing	System	10	83.3		
Total		12	100.0		

Main reasons for opposition: The requirements lie outside the remit of the Planning system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	41.7	100.0	100.0
Missing	System	7	58.3		
Total		12	100.0		

Main reasons for opposition: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	25.0	100.0	100.0
Missing	System	9	75.0		
Total		12	100.0		

Other

Valid
Cost
Developers view this as unnecessary and adding to costs of development
Total

Importance in determining a planning application: Provision of affordable housing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	8.3	8.3	8.3
	3.00	1	8.3	8.3	16.7

	4.00	2	16.7	16.7	33.3
	5.00	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Design/streetscene impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	4	33.3	33.3	33.3
	5.00	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Impact on wider surrounding landscape

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	2	16.7	16.7	16.7
	4.00	3	25.0	25.0	41.7
	5.00	7	58.3	58.3	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Impact on neighbours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	3	25.0	25.0	25.0
	5.00	9	75.0	75.0	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Impact on Highway Safety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	8.3	8.3	8.3
	4.00	6	50.0	50.0	58.3
	5.00	5	41.7	41.7	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Provision of on-site renewable energy technologies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	2	16.7	18.2	18.2
	2.00	2	16.7	18.2	36.4
	3.00	3	25.0	27.3	63.6
	4.00	1	8.3	9.1	72.7
	5.00	3	25.0	27.3	100.0
	Total	11	91.7	100.0	
Missing	System	1	8.3		
Total		12	100.0		

Importance in determining a planning application: Provision of public open space

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	8.3	8.3	8.3
	2.00	1	8.3	8.3	16.7
	3.00	4	33.3	33.3	50.0
	4.00	4	33.3	33.3	83.3
	5.00	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Provision of s106 contributions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	8.3	8.3	8.3
	3.00	4	33.3	33.3	41.7
	4.00	5	41.7	41.7	83.3
	5.00	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Importance in determining a planning application: Density

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	8.3	10.0	10.0
	2.00	1	8.3	10.0	20.0
	3.00	4	33.3	40.0	60.0
	4.00	1	8.3	10.0	70.0
	5.00	3	25.0	30.0	100.0
	Total	10	83.3	100.0	
Missing	System	2	16.7		
Total		12	100.0		

Importance in determining a planning application: Other

		Frequency	Percent
Missing	System	12	100.0

Other

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	100.0	100.0	100.0

In terms of the overall priorities of the Members of your Council, how important is the pursuit of environmental objectives, such as renewable energy provision?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Important	7	58.3	63.6	63.6
	Neither important or unimportant	3	25.0	27.3	90.9
	Unimportant	1	8.3	9.1	100.0
	Total	11	91.7	100.0	
Missing	System	1	8.3		
Total		12	100.0		

Do you believe that human-induced climate change is happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	75.0	81.8	81.8
	Not sure	2	16.7	18.2	100.0
	Total	11	91.7	100.0	
Missing	System	1	8.3		
Total		12	100.0		

LPAs – Policy: data summary

Does your current Local Plan/UDP contain a 'Merton-style' policy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	15.8	15.8	15.8
	No	16	84.2	84.2	100.0
	Total	19	100.0	100.0	

Will your LDF include such a policy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	10	52.6	52.6	52.6
	Not sure	9	47.4	47.4	100.0
	Total	19	100.0	100.0	

What size of residential development does/will this policy apply to?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	All residential development, regardless of size	2	10.5	18.2	18.2
	More than 10 dwellings	7	36.8	63.6	81.8
	Other	2	10.5	18.2	100.0

	Total	11	57.9	100.0	
Missing	System	8	42.1		
Total		19	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		18	94.7	94.7	94.7
	Yet to be decided	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

What percentage of on-site renewables does/will the policy require?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10% of predicted energy requirements	5	26.3	45.5	45.5
	More than 10% of predicted energy requirements	2	10.5	18.2	63.6
	Other	4	21.1	36.4	100.0
	Total	11	57.9	100.0	
Missing	System	8	42.1		
Total		19	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		17	89.5	89.5	89.5
	At least 10%	1	5.3	5.3	94.7
	Likely to be between 10-20%	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

Has much opposition to the existing/proposed policy been received?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	10.5	22.2	22.2
	No	7	36.8	77.8	100.0
	Total	9	47.4	100.0	
Missing	System	10	52.6		
Total		19	100.0		

Objection to this type of policy: Householders

		Frequency	Percent
Missing	System	19	100.0

Objection to this type of policy: Developers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	10.5	100.0	100.0
Missing	System	17	89.5		
Total		19	100.0		

Objection to this type of policy: Landowners

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	5.3	100.0	100.0
Missing	System	18	94.7		
Total		19	100.0		

Objection to this type of policy: Government Officer

		Frequency	Percent
Missing	System	19	100.0

Objection to this type of policy: Other

		Frequency	Percent
Missing	System	19	100.0

Main reasons for opposition: Unwillingness of developers to comply

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	5.3	100.0	100.0
Missing	System	18	94.7		
Total		19	100.0		

Main reasons for opposition: Negative effect on viability of development sites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	10.5	100.0	100.0
Missing	System	17	89.5		
Total		19	100.0		

Main reasons for opposition: Concerns about impacts on landscape or character of the area

		Frequency	Percent
Missing	System	19	100.0

Main reasons for opposition: Concerns about impacts on neighbours

		Frequency	Percent
Missing	System	19	100.0

Main reasons for opposition: Lack of expertise within the Planning department/Local Authority

		Frequency	Percent
Missing	System	19	100.0

Main reasons for opposition: The requirements lie outside the remit of the Planning system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	5.3	100.0	100.0
Missing	System	18	94.7		
Total		19	100.0		

Does your LPA have existing planning guidance on micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, in the form of adopted supplementary planning guidance/document	3	15.8	15.8	15.8
	Yes, but not as adopted supplementary planning guidance/document	2	10.5	10.5	26.3
	No	14	73.7	73.7	100.0
	Total	19	100.0	100.0	

Does your LPA intend to produce a SPF on micro-renewable technologies, to form part of the LDF?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	42.1	42.1	42.1
	No	10	52.6	52.6	94.7
	22.00	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

In terms of the overall priorities of the Members of your Council, how important is the pursuit of environmental objectives, such as renewable energy provision?

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Most important	2	10.5	12.5	12.5
	Important	12	63.2	75.0	87.5
	Neither important or unimportant	2	10.5	12.5	100.0
	Total	16	84.2	100.0	
Missing	System	3	15.8		
Total		19	100.0		

Do you believe that human-induced climate change is happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	73.7	73.7	73.7
	Not sure	5	26.3	26.3	100.0
	Total	19	100.0	100.0	

LPAs – Local Councillors: data summary

How long have you served on the Planning/Development Control Committee?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 years	1	12.5	12.5	12.5
	4-6 years	2	25.0	25.0	37.5
	7+ years	5	62.5	62.5	100.0
	Total	8	100.0	100.0	

Are you involved in providing pre-application advice?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	62.5	62.5	62.5
	No	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Familiarity with local planning policy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very familiar	5	62.5	62.5	62.5
	Familiar	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Familiarity with national planning policy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very familiar	1	12.5	12.5	12.5
	Familiar	6	75.0	75.0	87.5
	Neither familiar or unfamiliar	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Are you/the planning committee involved in policy formulation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	87.5	87.5	87.5
	No	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Are you given training on planning issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	100.0	100.0	100.0

Have you received any training on planning and renewable energy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	75.0	75.0	75.0

	No	2	25.0	25.0	100.0
	Total	8	100.0	100.0	

How frequently is planning training provided for committee members?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One-off	1	12.5	12.5	12.5
	More than once per year	6	75.0	75.0	87.5
	Yearly	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Is the training provided sufficient?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	62.5	62.5	62.5
	Yes	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Should more or better training be provided on renewable energy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	87.5	87.5	87.5
	No	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Do you think it is important for councillors to have a good understanding of the issues, or are you happy to rely on the professional advice of the planning officers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Important for councillors to have their own knowledge	3	37.5	37.5	37.5
	Mixture of both	5	62.5	62.5	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of solar water heating?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	2	25.0	25.0	25.0
	Good	1	12.5	12.5	37.5
	Basic	5	62.5	62.5	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of solar photovoltaic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	2	25.0	25.0	25.0
	Good	1	12.5	12.5	37.5
	Basic	4	50.0	50.0	87.5
	Very poor	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of heat pumps?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	2	25.0	25.0	25.0
	Basic	6	75.0	75.0	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of biomass boilers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	2	25.0	25.0	25.0
	Basic	5	62.5	62.5	87.5
	Poor	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of micro wind turbines?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	2	25.0	25.0	25.0
	Good	1	12.5	12.5	37.5
	Basic	5	62.5	62.5	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of micro hydro?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very good	1	12.5	12.5	12.5
	Good	1	12.5	12.5	25.0
	Basic	1	12.5	12.5	37.5
	Poor	3	37.5	37.5	75.0
	Very poor	1	12.5	12.5	87.5
	Haven't heard of	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

How would you best describe your knowledge of micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	1	12.5	12.5	12.5
	Basic	2	25.0	25.0	37.5
	Poor	3	37.5	37.5	75.0
	Very poor	1	12.5	12.5	87.5
	Haven't heard of	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Which of the following options best describes your Council's approach to planning proposals for domestic renewable energy schemes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	We support them wherever possible	5	62.5	62.5	62.5
	We only support them if all other considerations have been met	2	25.0	25.0	87.5
	Other	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		7	87.5	87.5	87.5
	inconsistent	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

In terms of the overall priorities of your Council, how important is the pursuit of environmental objectives, such as renewable energy provision?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most important	2	25.0	25.0	25.0
	Important	5	62.5	62.5	87.5
	Unimportant	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Provision of affordable housing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	12.5	12.5	12.5
	4.00	3	37.5	37.5	50.0
	5.00	4	50.0	50.0	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Design/streetscene impact

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	12.5	12.5	12.5
	4.00	4	50.0	50.0	62.5
	5.00	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Impact on wider surrounding landscape

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	2	25.0	25.0	25.0
	4.00	4	50.0	50.0	75.0
	5.00	2	25.0	25.0	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Impact on neighbours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4.00	7	87.5	87.5	87.5
	5.00	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Impact on Highway Safety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	3	37.5	37.5	37.5
	4.00	1	12.5	12.5	50.0
	5.00	4	50.0	50.0	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Provision of on-site renewable energy technologies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	1	12.5	12.5	12.5
	3.00	4	50.0	50.0	62.5
	4.00	1	12.5	12.5	75.0
	5.00	2	25.0	25.0	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Provision of public open space

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	3	37.5	37.5	37.5
	4.00	2	25.0	25.0	62.5
	5.00	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Provision of s106 contributions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	12.5	12.5	12.5
	3.00	2	25.0	25.0	37.5
	4.00	2	25.0	25.0	62.5
	5.00	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Density

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	2	25.0	25.0	25.0
	4.00	3	37.5	37.5	62.5
	5.00	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Importance in determining a planning application: Other

	Frequency	Percent

Missing	System	8	100.0

Opinions of the proposed changes to permitted development rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	1	12.5	12.5	12.5
	Positive	3	37.5	37.5	50.0
	Neutral	3	37.5	37.5	87.5
	Not aware of the proposed changes	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Opinions of requirement for development to install micro-renewables on all new housing developments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	2	25.0	25.0	25.0
	Positive	4	50.0	50.0	75.0
	Neutral	1	12.5	12.5	87.5
	Not sure	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Do you envisage that adopting this type of policy would be problematic?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	62.5	62.5	62.5
	No	3	37.5	37.5	100.0
	Total	8	100.0	100.0	

Main reasons for opposition: Unwillingness of developers to comply

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	37.5	100.0	100.0
Missing	System	5	62.5		
Total		8	100.0		

Main reasons for opposition: Negative effect on viability of development sites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	25.0	100.0	100.0
Missing	System	6	75.0		
Total		8	100.0		

Main reasons for opposition: Concerns about impacts on landscape or character of the area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	50.0	100.0	100.0
Missing	System	4	50.0		
Total		8	100.0		

Main reasons for opposition: Concerns about impacts on neighbours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	50.0	100.0	100.0
Missing	System	4	50.0		
Total		8	100.0		

Main reasons for opposition: Lack of expertise within the Planning department/Local Authority

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	12.5	100.0	100.0
Missing	System	7	87.5		
Total		8	100.0		

Main reasons for opposition: The requirements lie outside the remit of the Planning system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	12.5	100.0	100.0
Missing	System	7	87.5		
Total		8	100.0		

Do you believe that human-induced climate change is happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	62.5	62.5	62.5
	No	1	12.5	12.5	75.0
	Not sure	2	25.0	25.0	100.0
	Total	8	100.0	100.0	

Installers: data summary

Technologies installed: SWH

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	56.5	100.0	100.0
Missing	System	10	43.5		
Total		23	100.0		

Technologies installed: SPV

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	26.1	100.0	100.0
Missing	System	17	73.9		
Total		23	100.0		

Technologies installed: HP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	39.1	100.0	100.0
Missing	System	14	60.9		
Total		23	100.0		

Technologies installed: BB

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	21.7	100.0	100.0
Missing	System	18	78.3		
Total		23	100.0		

Technologies installed: MW

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	34.8	100.0	100.0
Missing	System	15	65.2		
Total		23	100.0		

Technologies installed: MH

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	4.3	100.0	100.0
Missing	System	22	95.7		
Total		23	100.0		

Technologies installed: CHP

		Frequency	Percent
Missing	System	23	100.0

Which of the following categories do the majority of your customers fit into?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Householders	6	26.1	28.6	28.6
	Developers	3	13.0	14.3	42.9
	Mixture of both	11	47.8	52.4	95.2
	Other	1	4.3	4.8	100.0
	Total	21	91.3	100.0	
Missing	System	2	8.7		
Total		23	100.0		

Number of enquiries received from customers interested in installing micro-renewable technologies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-5	11	47.8	50.0	50.0
	6-10	4	17.4	18.2	68.2
	11-15	3	13.0	13.6	81.8
	16-20	1	4.3	4.5	86.4
	26+	3	13.0	13.6	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

Proportion of enquiries which end up with an installation taking place

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-25%	18	78.3	81.8	81.8
	26-50%	4	17.4	18.2	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

What is your customers' main motivation for installing micro-renewable technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Long-term cost savings	12	52.2	54.5	54.5
	Worries about climate change	6	26.1	27.3	81.8
	Not sure	1	4.3	4.5	86.4
	Other	3	13.0	13.6	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		20	87.0	87.0	87.0
	both	1	4.3	4.3	91.3
	equally cc and long term savings	1	4.3	4.3	95.7
	planning rules and green statements	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

Reasons for not going ahead with an installation: Up-front cost of the technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	91.3	100.0	100.0
Missing	System	2	8.7		
Total		23	100.0		

Reasons for not going ahead with an installation: Additional costs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	21.7	100.0	100.0
Missing	System	18	78.3		
Total		23	100.0		

Reasons for not going ahead with an installation: Length of pay-back time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	82.6	100.0	100.0
Missing	System	4	17.4		
Total		23	100.0		

Reasons for not going ahead with an installation: Lack of information about the technologies available

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	21.7	100.0	100.0
Missing	System	18	78.3		
Total		23	100.0		

Reasons for not going ahead with an installation: Technical difficulties

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	6	26.1	100.0	100.0
Missing	System	17	73.9		
Total		23	100.0		

Reasons for not going ahead with an installation: Waiting times for an installation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	13.0	100.0	100.0
Missing	System	20	87.0		
Total		23	100.0		

Reasons for not going ahead with an installation: Difficulty getting planning permission

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	21.7	100.0	100.0
Missing	System	18	78.3		
Total		23	100.0		

Reasons for not going ahead with an installation: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	4.3	100.0	100.0
Missing	System	22	95.7		
Total		23	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		22	95.7	95.7	95.7
	changing grants	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

What is the biggest reason for customers deciding not to go ahead with an installation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up-front cost of the technology	19	82.6	86.4	86.4
	Length of pay-back time	2	8.7	9.1	95.5
	Difficulty finding an installer	1	4.3	4.5	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

What is the average waiting time for an installation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 month	6	26.1	27.3	27.3
	1-3 months	11	47.8	50.0	77.3
	4-6 months	4	17.4	18.2	95.5
	6+ months	1	4.3	4.5	100.0

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	47.8	100.0	100.0
Missing	System	12	52.2		
Total		23	100.0		

Forms of advertising used: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1	4.3	100.0	100.0
Missing	System	22	95.7		
Total		23	100.0		

Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		21	91.3	91.3	91.3
	exhibitions	1	4.3	4.3	95.7
	flyers	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

Why does your company choose not to advertise?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not enough interest generated by adverts	3	13.0	60.0	60.0
	No need to advertise, plenty of business generated without	2	8.7	40.0	100.0
	Total	5	21.7	100.0	
Missing	System	18	78.3		
Total		23	100.0		

Are you a member or intending to become a member of the UK Microgeneration Certification Scheme

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	60.9	70.0	70.0
	No	6	26.1	30.0	100.0
	Total	20	87.0	100.0	
Missing	System	3	13.0		
Total		23	100.0		

Do you think this accreditation system for products and installers will be beneficial?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	39.1	45.0	45.0
	No	11	47.8	55.0	100.0
	Total	20	87.0	100.0	
Missing	System	3	13.0		
Total		23	100.0		

What proportion of the installations you carry out require planning permission?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	5	21.7	22.7	22.7
	1-25%	8	34.8	36.4	59.1
	26-50%	3	13.0	13.6	72.7
	51-75%	4	17.4	18.2	90.9
	76-100%	2	8.7	9.1	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

How consistent is advice received from LPAs about whether planning permission is required for micro-renewable installations?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consistent	2	8.7	9.1	9.1

	Fairly consistent	6	26.1	27.3	36.4
	Inconsistent	8	34.8	36.4	72.7
	N/A or don't know	6	26.1	27.3	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

How easy do you think it is to get planning permission: Solar water heating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	4	17.4	21.1	21.1
	Neither easy nor difficult	7	30.4	36.8	57.9
	Difficult	5	21.7	26.3	84.2
	Very difficult	3	13.0	15.8	100.0
	Total	19	82.6	100.0	
Missing	System	4	17.4		
Total		23	100.0		

How easy do you think it is to get planning permission: Solar photovoltaic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	2	8.7	12.5	12.5
	Neither easy nor difficult	6	26.1	37.5	50.0
	Difficult	3	13.0	18.8	68.8
	Very difficult	5	21.7	31.3	100.0
	Total	16	69.6	100.0	
Missing	System	7	30.4		
Total		23	100.0		

How easy do you think it is to get planning permission: Heat pumps

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neither easy nor difficult	4	17.4	23.5	23.5
	Difficult	2	8.7	11.8	35.3
	Very difficult	11	47.8	64.7	100.0
	Total	17	73.9	100.0	
Missing	System	6	26.1		
Total		23	100.0		

How easy do you think it is to get planning permission: Biomass boilers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	1	4.3	5.6	5.6
	Neither easy nor difficult	5	21.7	27.8	33.3
	Difficult	1	4.3	5.6	38.9
	Very difficult	11	47.8	61.1	100.0
	Total	18	78.3	100.0	
Missing	System	5	21.7		
Total		23	100.0		

How easy do you think it is to get planning permission: Micro wind turbines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very easy	2	8.7	11.8	11.8
	Easy	7	30.4	41.2	52.9
	Neither easy nor difficult	2	8.7	11.8	64.7
	Very difficult	6	26.1	35.3	100.0
	Total	17	73.9	100.0	
Missing	System	6	26.1		
Total		23	100.0		

How easy do you think it is to get planning permission: Micro hydro-power

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very easy	1	4.3	6.3	6.3
	Easy	3	13.0	18.8	25.0
	Very difficult	12	52.2	75.0	100.0
	Total	16	69.6	100.0	

Missing	System	7	30.4		
Total		23	100.0		

How easy do you think it is to get planning permission: Micro CHP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Easy	2	8.7	12.5	12.5
	Difficult	2	8.7	12.5	25.0
	Very difficult	12	52.2	75.0	100.0
	Total	16	69.6	100.0	
Missing	System	7	30.4		
Total		23	100.0		

Obstacles to getting planning permission: Location of dwelling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	47.8	100.0	100.0
Missing	System	12	52.2		
Total		23	100.0		

Obstacles to getting planning permission: Neighbour objections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	17.4	100.0	100.0
Missing	System	19	82.6		
Total		23	100.0		

Obstacles to getting planning permission: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	34.8	100.0	100.0
Missing	System	15	65.2		
Total		23	100.0		

Obstacles to getting planning permission: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	39.1	100.0	100.0
Missing	System	14	60.9		
Total		23	100.0		

Obstacles to getting planning permission: Unsupportive local councillors/planning commitee members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	21.7	100.0	100.0
Missing	System	18	78.3		
Total		23	100.0		

Obstacles to getting planning permission: Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	17.4	100.0	100.0
Missing	System	19	82.6		
Total		23	100.0		

Other

Valid
lack of knowledge and misconception by general public
national park authorities
Total

Would you usually seek advice from the LPA during the course of a development?

	Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	Yes	12	52.2	54.5	54.5
	No	10	43.5	45.5	100.0
	Total	22	95.7	100.0	
Missing	System	1	4.3		
Total		23	100.0		

Opinion of the advice you normally receive from the LPA?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfactory	9	39.1	60.0	60.0
	Unsatisfactory	2	8.7	13.3	73.3
	Highly unsatisfactory	1	4.3	6.7	80.0
	Varies, depending on the Authority	3	13.0	20.0	100.0
	Total	15	65.2	100.0	
Missing	System	8	34.8		
Total		23	100.0		

Problems encountered with the LPA: None normally encountered

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	17.4	100.0	100.0
Missing	System	19	82.6		
Total		23	100.0		

Problems encountered with the LPA: Inconsistency in the advice provided

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	30.4	100.0	100.0
Missing	System	16	69.6		
Total		23	100.0		

Problems encountered with the LPA: Poor quality of advice given

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	8.7	100.0	100.0
Missing	System	21	91.3		
Total		23	100.0		

Problems encountered with the LPA: Advice provided too late in the process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	13.0	100.0	100.0
Missing	System	20	87.0		
Total		23	100.0		

Problems encountered with the LPA: Unsupportive planning policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	5	21.7	100.0	100.0
Missing	System	18	78.3		
Total		23	100.0		

Problems encountered with the LPA: Unsupportive planning officers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	13.0	100.0	100.0
Missing	System	20	87.0		
Total		23	100.0		

Problems encountered with the LPA: Unsupportive local councillors/planning committee members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	17.4	100.0	100.0

Missing	System	19	82.6		
Total		23	100.0		

Opinions of the proposed changes to permitted development rights

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	7	30.4	33.3	33.3
	Positive	7	30.4	33.3	66.7
	Neutral	1	4.3	4.8	71.4
	Negative	1	4.3	4.8	76.2
	Not sure	2	8.7	9.5	85.7
	Not aware of the proposed changes	3	13.0	14.3	100.0
	Total	21	91.3	100.0	
Missing	System	2	8.7		
Total		23	100.0		

Reason

Valid
concerns over unrestricted/unsafe installations
good for climate and will encourage growth in the market
it will remove one of the biggest obstacles, especially to obtain the DTI grant
local council should encourage homeowners to purchase RE
Remove hurdle but has potential for abuse which could create bad impression
speed and loss of bureaucracy which puts people off
takes planners out of the loop for small systems
they would encourage small inefficient systmes making it harder to install larger productive systems
To encourage take-up
Total

Opinions of requirement for development to install micro-renewables on all new housing developments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very positive	13	56.5	56.5	56.5
	Positive	7	30.4	30.4	87.0
	Not sure	1	4.3	4.3	91.3
	Not aware of the proposed changes	2	8.7	8.7	100.0
	Total	23	100.0	100.0	

Reason

Valid
a sustainable way of ensuring we take care of the planet
Doesn't go far enough.
easy to install at build stage
Increase take-up and therefore reduce cost
it has to be the way forward because fossil fuel are not going to last forever
long overdue
To develop the market
Very positive but should be more than 20%
Total

Do you believe that human-induced climate change is happening?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	73.9	73.9	73.9
	No	3	13.0	13.0	87.0
	Not sure	3	13.0	13.0	100.0
	Total	23	100.0	100.0	